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A Matter of Fit: The Law of Discrimination and the Science of Implicit Bias

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INTRODUCTION

Integrating the insights gleaned from scientific research into the framework of the law requires courts to appreciate the empirical complexities of the former and the analytical details of the latter. This is no simple feat. It requires juxtaposing the lessons and limitations of science with the demands of the law. This feat has proved particularly nettlesome—or, at least, controversial—in regard to the degree to which scientific research on implicit bias, or stereotypes, helps discrimination claims under Title VII.¹ This subject presents a wide cross section of the challenges endemic to the connection between law and science, including ambiguity regarding the meaning of the law, inherent limitations in studying the subject of implicit bias, enigmatic interpretations of research data, and imperfect correspondence between the reach of science and the precepts of the law. A fair evaluation of the relevance of research on implicit bias demands a clear exposition of the law, close examination of

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1. Compare Gregory Mitchell & Philip E. Tetlock, *Antidiscrimination Law and the Perils of Mindreading*, 67 OHIO ST. L.J. 1023, 1056–58 (2006) (singling out the Implicit Association Test for particular approbation, the authors contend that “unconscious processes” should not be relied upon as either legislative authority or litigation evidence in antidiscrimination cases until more valid research is done), with Linda Hamilton Krieger & Susan T. Fiske, *Behavioral Realism in Employment Discrimination Law: Implicit Bias and Disparate Treatment*, 94 CAL. L. REV. 997, 1035 (2006) (extolling the value of psychological research, and in particular researchers’ discoveries regarding implicit biases, for solving the problem of defining and identifying discriminatory motivation in Title VII disparate treatment cases).

the import of the science, and full consideration of the contemporary research literature. This Article examines the basic legal framework established by Title VII² and considers whether, and how, the broad program of research on implicit bias might fit into this scheme. We focus primarily on the admissibility of expert opinion, an issue that necessarily depends on the meaning of the law and the import of social science.³

Scientific evidence must be both relevant and reliable.⁴ Although courts typically treat these requirements separately, they are closely related in principle. As a preliminary matter, if scientific research is fundamentally flawed, and thus not reliable or valid for any purpose, it is inadmissible. Hence, a necessary precondition for admissibility is basic validity. In many cases, research programs pass muster on this precondition. The law of evidence, however, demands more. To be admissible, research must be valid for the purpose for which it is offered. This is a question of relevance, which in this context is better described as a matter of “fit.”⁵ Fit concerns the logical connection between scientifically valid expert opinion and the issues that must be proven as a matter of law. Expert opinion relevant for one legal purpose may not be relevant, or fit, for another.⁶ For instance, valid research indicating that eyewitnesses are unreliable when they make cross-racial identifications might not fit a case that involves a cross-ethnic identification.⁷ Assessments of fit must consider whether the proffered expertise is valid for purposes made salient by applicable law. Fit, therefore, provides the bridge between the methodological bases of expert opinion and the substantive requirements of law.

2. 42 U.S.C. § 2000e (2006).

3. Our guide for considering admissibility is *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993), since it applies to federal cases brought under Title VII. See *infra* notes 5–6, 243–46 and accompanying text for additional discussion of *Daubert*.

4. FED R. EVID. 702.

5. *Daubert*, 509 U.S. at 591 (citing *United States v. Downing*, 753 F.2d 1224, 1242 (3d Cir. 1985)) (describing the relevance inquiry as a matter of “fit”).

6. The Court in *Daubert* offered this somewhat fanciful example to make the point:

The study of the phases of the moon, for example, may provide valid scientific “knowledge” about whether a certain night was dark, and if darkness is in fact in issue, the knowledge will assist the trier of fact. However (absent creditable grounds supporting such a link), evidence that the moon was full on a certain night will not assist the trier of fact in determining whether an individual was unusually likely to have behaved irrationally that night. Rule 702’s “helpfulness” standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility.

Id. at 591 (“[S]cientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.”).

7. See, e.g., *State v. Romero*, 922 A.2d 693, 700 (N.J. 2007) (“At present, there is insufficient data to support the conclusion that, as a matter of due process, people of the same race but different ethnicity, specifically Hispanic ethnicity, require a [special judicial] instruction whenever they are identified by someone of a different ethnicity.”).

The demand that expert opinion fit the legal issues in dispute manifests itself in two basic ways. The first concerns what might be termed “legal fit,” and involves whether the expert’s opinions relate to an issue of law presented in the case. The second concerns what might be termed “scientific fit,” and involves whether the research basis for the expert’s opinion can be validly applied to the legal issues in dispute. Although both are matters of fit, the legal and scientific varieties arise in different ways.

One example of legal fit comes from *Garlinger v. Hardee’s Food Systems, Inc.*⁸ The plaintiff brought suit after an employee of the defendant spilled coffee on him at a drive-through window.⁹ The plaintiff argued that the coffee was defectively designed because it was too hot.¹⁰ The plaintiff’s expert, a biomechanical engineer, sought to testify that the risk of thermal burn was greater when the temperature of the coffee was 180 degrees, rather than 150 degrees.¹¹ The Fourth Circuit found that this evidence was not relevant to a legal issue present in the case.¹² The real issue, which the expert did not address, was whether making cooler coffee was “even possible, and, if so, whether [the defendant] was unreasonable for failing to make such a modification.”¹³ The court explained that while “the expert’s testimony about the effects of hot liquid on human skin may have scientific validity in some contexts, it does not ‘fit’ this case.”¹⁴ It was simply not a matter that was legally in dispute, and thus no amount of valid scientific evidence would be admissible to prove it. A party cannot prove what the law renders irrelevant.

Scientific fit concerns whether the research basis for an expert opinion generalizes to the legal issue presented—what social scientists call external validity.¹⁵ For example, in *Metabolife International v. Wornick*, a manufacturer of herbal diet pills brought suit against a television station and others for defamation, because the defendants asserted that plaintiff’s product was unsafe.¹⁶ In order to prove that its product was safe, and thus that the televised report was false, the plaintiff offered an assortment of research, including animal studies.¹⁷ The

8. 16 F. App’x 232, 236 (4th Cir. 2001).

9. *Id.* at 234.

10. *Id.*

11. *Id.*

12. *Id.* at 236.

13. *Id.*

14. *Id.*

15. See generally WILLIAM R. SHADISH ET AL., EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR GENERALIZED CAUSAL INFERENCE (2001).

16. 264 F.3d 832, 837 (9th Cir. 2001).

17. *Id.* at 842.

question presented concerned whether animal studies were relevant to—i.e., scientifically fit—the legal issue regarding the safety of the product.¹⁸ The majority found that the animal studies fit the issue of the product's safety and disagreed that the “species gap” necessarily rendered such work unhelpful to the trier of fact.¹⁹ Judge Rymer wrote separately to disagree with this conclusion, arguing that “straight extrapolation of animal data to humans is not appropriate.”²⁰

Legal fit presents a traditional problem of legal reasoning in assessing the substance of the standard that applies in particular cases. This is usually a problem of interpretation, whether of a statute, constitution, or common law.²¹ Indeed, one way of phrasing legal fit is to assume the validity of the expert opinion and ask whether it is relevant to the case. If the answer is no, the proffered expertise must be excluded.

Scientific fit, in contrast, calls upon judges to examine the methodological bases for the proffered expert opinion and consider whether they have probative value for a legal issue present in the case. This is a nontraditional problem for lawyers and judges because it demands a blend of legal and scientific reasoning. Scientific fit requires judges to have a fairly sophisticated understanding of both science and the law. For instance, the question of whether animal studies can be relied upon to conclude similar effects in humans is, at bottom, a complex scientific judgment. Under the Federal Rules of Evidence, however, it is one that must be made by judges in their capacity as gatekeepers.²² And in most cases it is no simple matter.

In most evidentiary contexts, scientific fit is not about a single research study, or even a set of studies, using a single paradigm. Researchers studying a particular phenomenon ought to employ a variety of research protocols, varying subject populations, operational definitions of the phenomenon under investigation, dependent variables, and so forth. In the animal study example, toxicological studies using animals will often be buttressed by epidemiological studies having varying strengths and weaknesses; together these different types of basic empirical studies might be buttressed by arguments regarding the biological plausibility of the phenomenon.²³ In the context of

18. *Id.* at 841–42.

19. *Id.*

20. *Id.* at 859 (Rymer, J., dissenting).

21. It should be emphasized that scientific knowledge often is an integral part of interpreting applicable law. The rules of evidence, however, do not apply at the interpretation stage. This subject is discussed at greater length *infra* notes 32–37 and accompanying text.

22. See FED. R. EVID. 702; *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589 (1993) (“[U]nder the [Federal] Rules the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.”).

23. See generally 2 MODERN SCIENTIFIC EVIDENCE: THE LAW AND SCIENCE OF EXPERT TESTIMONY § 5

discrimination litigation, therefore, the scientific fit of proffered evidence must be evaluated in light of the full research literature, and not any single strand of it.²⁴ Hence, the scientific fit of an expert's opinion ordinarily depends on the integration of a large collection of disparate studies and judgment calls regarding their import.

Not infrequently, a line of research will be found to scientifically fit one legal issue presented but not another in the same case. The classic example of this is eyewitness identification research. Many courts find psychological research on the unreliability of cross-racial identifications admissible to instruct jurors about factors that might have affected a particular identification, but none allow this research to support an expert opinion that a particular identification was unreliable.²⁵ Scientific fit, therefore, obligates courts to pierce the surface of a research program in order to determine whether it can be used for all of the purposes for which it might be offered.

Most areas of expert evidence present issues of legal and scientific fit, and courts must assess each area of expert evidence on its own merits. The analysis is fairly straightforward and can be divided into three essential questions. First, what is the proper interpretation of the law? Second, does the proffered expertise legally fit one or more issues brought into question by the law? Third, does the research basis scientifically fit, in that it is sufficient to support the proffered opinion?

This Article considers these three questions in analyzing whether research on implicit bias can assist triers of fact in discrimination litigation under Title VII. Part I examines the first two queries, the interpretation of applicable law and the legal fit between the law and scientific research on implicit bias. Part II provides an overview of the psychological and sociological literatures in order to determine whether

(David L. Faigman et al. eds., 2007–2008 ed.) [hereinafter *MODERN SCIENTIFIC EVIDENCE*].

24. In their recent article, Gregory Mitchell and Philip Tetlock make this basic error. See generally Mitchell & Tetlock, *supra* note 1. They set forth their thesis that recent legal scholarship “challenges the default psychological assumption in antidiscrimination law that discrimination is a function of psychological processes under the conscious control of the discriminator, and replaces it with the assumption that discrimination is the result of unconscious, or implicit, psychological processes that operate automatically, beyond conscious control.” *Id.* at 1023. Although their thesis is stated broadly, their actual critique is limited almost exclusively to one line of research that uses one methodology—the Implicit Association Test (IAT). *Id.* at 1025. As Part III, *infra*, makes abundantly clear, empirical evidence of implicit bias comes from studies using multiple methods and paradigms; it is not limited to the IAT. Thus, Mitchell and Tetlock’s critique of this one method leaves untouched the rest of the research literature that demonstrates the existence of implicit bias using a variety of other methodologies. Interestingly, the findings from this broader research base in psychology and sociology are often very consistent with studies using IATs. See Part II, *infra*, for a discussion of the psychological and sociological research underlying the science of implicit bias.

25. See David L. Faigman et al., *Eyewitness Identifications*, in 2 *MODERN SCIENTIFIC EVIDENCE*, *supra* note 23, at § 16.

research might support expert opinion in these cases. Part III returns to the matter of fit and considers whether the extant research scientifically fits one or more issues brought into question by the law. We conclude that the full research literature amply supports expert opinion regarding implicit bias and its potential to effect employment decisions. The research, however, focuses on the phenomenon generally and does not demonstrate that an expert can validly determine whether implicit bias caused a specific employment decision. Courts should therefore admit expert testimony, insofar as it will assist triers of fact to understand the phenomenon of implicit bias generally, so that they can then determine whether a particular employment decision was a product of improper motives.

I. THE LAW: INTERPRETATION AND FIT

A. INTERPRETATION

Title VII makes it an “unlawful employment practice for an employer . . . to discriminate against any individual . . . , *because of* such individual’s race, color, religion, sex, or national origin.”²⁶ In a 1991 Act, Congress clarified this language, providing that “an unlawful employment practice is established when the complaining party demonstrates that [a prohibited characteristic] was a motivating factor for any employment practice, even though other factors also motivated the practice.”²⁷ In order to establish an individual discrimination claim under Title VII, therefore, a complainant must prove, by a preponderance of the evidence, that (1) he or she is a member of a protected group, (2) he or she suffered as the result of a negative employment decision, and (3) his or her membership in a protected group was a motivating factor in that decision.²⁸

For present purposes, the first two criteria are not controversial. The third criterion, of course, presents the key operative question. How should the concept that protected group membership was a “motivating factor” be defined? On its face, if the motivating factor must be a consciously held belief that is self-reported by the decision maker, then research on implicit bias is not relevant to, or does not fit, the applicable law. If, however, implicit beliefs qualify as motivating factors under the statute, then valid research in this area would squarely fit the legal standard.

26. 42 U.S.C. § 2000e-2(a)(1) (2006) (emphasis added).

27. 42 U.S.C. § 2000e-2(m) (2006); *see* *Desert Palace, Inc. v. Costa*, 539 U.S. 90, 94 (2003) (citing *Landgraf v. USI Film Products*, 511 U.S. 244, 250–51 (1994)).

28. *Desert Palace, Inc.*, 539 U.S. at 100.

Congress, however, did not specifically define what it meant by the phrase “motivating factors” under Title VII. The notion of “motivating factors,” of course, has two interconnected components, one cognitive and the other behavioral. One way of understanding motivating factors is to assume that there is a basic linear relationship between thought and action. Accordingly, an actionable decision occurs when an employer thinks bad (i.e., biased) thoughts and acts pursuant to those thoughts.²⁹ This is the conventional view of motivation and behavior: bad thoughts cause bad behavior. But not all motivations are necessarily fully conscious. Even common sense experience suggests that there is more to thinking and behaving than what we specifically intend to do. Anyone who has driven home on “autopilot”—that is, without being consciously aware throughout the drive—intuitively understands that behavior can be caused by implicit thoughts. The statute and the legislative history are silent as regards the kinds of “thoughts” that qualify as “motivating.” The statute simply does not specify what state of mind qualifies as legally actionable.

As a general matter, therefore, the term “motivating factors” might be defined either strictly or broadly. A strict interpretation would encompass only explicitly contemplated intentions. In order to be liable, an employer would have had to act pursuant to explicitly biased thoughts. As shorthand, this could be called the “explicit bias rule.” A broad interpretation, on the other hand, would also encompass thought processes that led to objectionable behavior. As shorthand, this could be called the “explicit or implicit bias rule.”

Under the explicit bias rule, an employer would not be liable if he or she was “honest” in saying that bias was not a motivating factor. Plaintiffs, therefore, would be obligated to prove that the basis the employer gave for the negative employment decision “was a lie or had no basis in fact.”³⁰ Hence, if an employer honestly believed that the motivating factor for the negative employment decision was nondiscriminatory, he or she would not be liable under the law.³¹ Therefore, it would make no difference if, in fact, the motivating factor

29. Cf. 42 U.S.C. § 2000e-2(m).

30. *Crim v. Bd. of Educ.*, 147 F.3d 535, 541 (7th Cir. 1998) (citations omitted); see Krieger & Fiske, *supra* note 1, at 1037. See generally Linda Hamilton Krieger, *The Content of Our Categories: A Cognitive Bias Approach to Discrimination and Equal Employment Opportunity*, 47 STAN. L. REV. 1161, 1178–81 (1995).

31. See Krieger & Fiske, *supra* note 1, at 1038 (“[T]he logic of the honest belief rule decisions points to the operation of an unstated and unexamined judicial theory about the nature of discriminatory motivation itself—that when people discriminate they know that they are doing so. The honest belief rule assumes that a reason proffered by an employer to explain its action is either . . . an ‘honest answer’ or a deliberate lie.”).

was an implicit prejudice that the employer had little or no knowledge of. Under the explicit bias rule, implicit biases are irrelevant.

But conscious intentionality is not the only way to conceive of motivating factors. It is hardly sacrosanct in the law that people are held accountable only for what they consciously intended to do and actually did; civil liability is regularly premised on what people should have anticipated before acting but did not. If people do not have full cognitive access to what motivates their behavior, an employer may honestly believe that nondiscriminatory reasons led him or her to impose a negative outcome on the plaintiff, but be wrong about those reasons. An employer could have acted in good faith, yet still have been motivated by bias or prohibited stereotypes. If implicit biases motivate behavior, the law might reasonably place a duty on employers to take reasonable measures to ensure against them. Hence, under an explicit or implicit bias rule, implicit biases are relevant.

Whether implicit motives—or an employer's failure to counteract them—should be actionable is, of course, separate from the psychological matter of how people think and what *causes* them to behave. However, it is imperative to understand how people think in order to establish the basic scope of Title VII. If the phenomenon of implicit bias is chimerical, then the explicit bias rule seems uncontroversial. Only consciously formed motivations would be relevant to determining whether a negative employment decision was discriminatory. If implicit biases do motivate behavior, however, then the law might seek to regulate their influence under a law that specifically proscribes all “motivating factors.” Hence, the first question to consider is what motivates behavior.

At this point in the discussion, it is important to emphasize that information about how people think is pertinent to interpreting the law itself; we are not yet in the realm of applying the law. Evidentiary standards are quite different in the separate domains of interpretation and application. The factual issues of human cognition, in this context, operate as “legislative facts” and must be found by judges as such, because they are an integral component in judicial interpretation of the law.³² Although it generally behooves judges still to employ good science in deciding legislative fact questions, it is not their only obligation in carrying out this task. Specifically, the first responsibility in interpreting a

32. See Kenneth Culp Davis, *An Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364, 402–03 (1942) (explaining that legislative facts are those facts that transcend the particular dispute and have relevance to legal reasoning and the fashioning of legal rules). In the lexicon of Professors Laurens Walker and John Monahan, such facts are the product of “social authority” and are resolved by judges and become subjects of precedent. See Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 VA. L. REV. 559, 585 (1987).

statute is to determine what the legislature intended by the words it chose.³³ If Congress had only a primitive understanding of human cognition, it would not be the courts' job to modernize that understanding based on current scientific knowledge. If Congress, however, intended to enlist contemporary understanding of cognition to inform the law's meaning, or was merely silent on the subject, then courts are obliged to give the statute's words a reasonable interpretation in light of the best knowledge available.³⁴

Congress was largely silent on the question of what constitutes motivating factors, thus leaving a void that the courts need to fill.³⁵ Given the language Congress did employ, some conception of human cognition must inform the meaning of the statute.³⁶ Since the law speaks in terms of motivating factors, it is incumbent on courts to employ some theory of human thought processes. The explicit bias rule does this, in that it presumes that as conscious actors people have access to the reasons behind their actions. Indeed, this seems intuitive. Most people believe that they largely have access to the cognitive processes that lie behind their actions.³⁷ Yet, as some of the research surveyed in Part II indicates, our intuitions appear to be quite wrong. It turns out that our access to the true motivating bases for our behavior is imperfect and, more troubling for Title VII law, misleading.

Seemingly inconsistent with defining "motivating factors" as permitting proof of implicit bias are the Supreme Court's repeated statements that Title VII proscribes only "intentional discrimination."³⁸

33. See ANTONIN SCALIA, *A MATTER OF INTERPRETATION: FEDERAL COURTS AND THE LAW* 22–23 (1997); see also William N. Eskridge, Jr., *Norms, Empiricism, and Canons in Statutory Interpretation*, 66 U. CHI. L. REV. 671, 671–72 (1999).

34. See Eskridge, *supra* note 33, at 672.

35. In matters of statutory interpretation the question concerns what was intended by the enacting legislature. Congress in this case failed to say specifically whether motivating factors were limited to those consciously intended. Krieger and Fiske consider this question and employ the long-accepted technique of surveying common usage in modern dictionaries. They make the following argument:

The Webster's Third New International Dictionary of the English Language, Unabridged defines the word "motive" as "something within a person (as need, idea, organic state, or emotion) that incites him to action." In other words, a "motivating factor" is an internal mental state, a category that includes cognitive structures like implicit stereotypes or other social schema that influence social perception, judgment, and action. For race, color, sex, national origin, or other protected characteristics to "motivate" an employment decision means that the characteristic served as a stimulus which, interacting with the decision maker's internal biased mental state, led the decision maker to behave toward the person differently than he otherwise would.

Krieger & Fiske, *supra* note 1, at 1056 (citations and footnote omitted).

36. Cf. 42 U.S.C. § 2000e-5(g)(2)(b) (2006).

37. TIMOTHY D. WILSON, *STRANGERS TO OURSELVES: DISCOVERING THE ADAPTIVE UNCONSCIOUS* 4–5 (2002).

38. See, e.g., *Reeves v. Sanderson*, 530 U.S. 133, 141 (2000).

However, the belief that implicit bias research is irrelevant to the legal issue of “intentional” discrimination badly conflates the evidentiary question of relevance with the ultimate question of liability. As the Court’s cases make plain, in Title VII cases “[t]he *ultimate question* is whether the employer intentionally discriminated.”³⁹ This issue may be proved, however, by both direct and circumstantial evidence. It is of course an elementary principle of evidence law that every piece of evidence need not win the case. “A brick is not a wall.”⁴⁰ The question of whether a defendant “intentionally discriminated” in a particular case must be determined by an assessment of the totality of the circumstances.⁴¹ No smoking gun is required.

Indeed, the Court has consistently taken a broad brush approach to the issue of “intentionality” in Title VII cases. For example, in *Reeves v. Sanderson*, the Court applied the *McDonnell Douglas* framework,⁴² which pertains to cases in which the plaintiff relies on circumstantial evidence.⁴³ Under this framework, the plaintiff has the initial burden to prove a prima facie case of discrimination.⁴⁴ If the plaintiff succeeds, the burden of production shifts to the defendant, who must provide a legitimate reason for his or her actions.⁴⁵ If the defendant provides a nondiscriminatory reason, the plaintiff then must either show that an illegal consideration was a determinative factor in the employment decision or that the defendant’s explanation for its action was merely pretext.⁴⁶ The Court in *Reeves* stated unambiguously that in proving the ultimate question—intentional discrimination—triers of fact could reasonably infer this conclusion from indirect proof.⁴⁷ For instance, the *Reeves* Court itself found that “[p]roof that the defendant’s explanation is unworthy of credence . . . may be quite persuasive.”⁴⁸ Like the silent dog in *The Hound of the Baskervilles*, even absence of proof can be powerful evidence.⁴⁹

39. *Id.* at 146 (emphasis added).

40. MCCORMICK ON EVIDENCE § 185, 278 (John Strong ed., 5th ed. 1999) (“Whether the entire body of one party’s evidence is sufficient to go to the jury is one question. Whether a particular item of evidence is relevant to the case is quite another.”).

41. *The Anderson Group, LLC v. City of Saratoga Springs*, No. 1:05-CV-1369 (GLS/DRH), 2008 WL 819755, at *6 (N.D.N.Y. Mar. 25, 2008).

42. *Reeves*, 530 U.S. at 142.

43. *McDonnell Douglas v. Green*, 411 U.S. 792, 802 (1973).

44. *Id.* at 802–05.

45. *Id.*

46. *Id.*

47. *Reeves*, 530 U.S. at 147.

48. *Id.* The Court summarized as follows: “[A] plaintiff’s prima facie case, combined with sufficient evidence to find that the employer’s asserted justification is false, may permit the trier of fact to conclude that the employer unlawfully discriminated.” *Id.* at 148.

49. ARTHUR CONAN DOYLE, *THE HOUND OF THE BASKERVILLES: ANOTHER ADVENTURE OF SHERLOCK*

In considering the totality of the circumstances, proof of implicit bias potentially provides considerable information to the trier of fact in at least two respects. Foremost, it can assist fact finders to understand the complex realities of cognition and behavior that underlie legal notions such as “motivating factors” and “intentional discrimination.”⁵⁰ In the simplest of cases, human motivations are complex and enigmatic. Fact finders can use all of the help they can get. Second, evidence of implicit bias can help establish the context for evaluating the facts of the respective case.⁵¹ Comments or actions that might otherwise be ambiguous or seem tangential to the dispute might take on greater meaning or more resonance in light of this proof.

Moreover, there may be a more direct role for evidence of implicit bias in Title VII cases. Although the Court employs the term “intentional” in its doctrinal expansion of the statute’s actual words, “motivating factors,” it has never held that only consciously held and explicit motives qualify under the applicable law.⁵² Especially in light of the science, such a construction seems particularly crabbed and artificial. As noted earlier, anyone who has driven home on “autopilot” intuitively understands that behavior can be “intended” implicitly. If the driver on autopilot killed a pedestrian, the question whether he “intended” to do so is complicated. He certainly “intended” to drive through the intersection notwithstanding any objects in his way. As a criminal matter, he might not have had the specific intent to kill, but his implicit intent—or his failure to avoid killing someone as he specifically (albeit implicitly) intended to drive through the intersection—might still be subject to prosecution. Even as employed in the law, intent and motivating factors are multifarious concepts. Under Title VII, it is entirely consistent to consider implicit motivations as one component, and possibly a key component, in determining whether a defendant “intentionally discriminated.”⁵³ Intentional is simply not coterminous with explicit, and the Court’s cases make plain that the conclusion of “intentionality” can be informed by a wide range of circumstances.⁵⁴

In addition to the underlying presumptions of human cognition, the explicit bias rule is guided by a legal theory of questionable provenance. It presumes that only when people have consciously made decisions motivated by bias should they be liable under the law. The driving theory

HOLMES (1932).

50. See discussion of Title VII, *supra* notes 26–29 and accompanying text.

51. See, e.g., Brian A. Nosek et al., *Harvesting Implicit Group Attitudes and Beliefs from a Demonstration Web Site*, 6 GROUP DYNAM. THEORY, RES. & PRAC. 101, 106, 111 (2002).

52. See *Reeves*, 530 U.S. at 140, 142.

53. See, e.g., Kreiger & Fiske, *supra* note 1, at 1004.

54. See *Reeves*, 530 U.S. at 141–48.

is thus actually twofold, one psychological and the other legal: first, people ordinarily have access to their motivating factors; and second, only when they have consciously acted pursuant to illicit motives should they be held accountable.⁵⁵ As discussed above and further developed in Part II, the explicit bias rule does not conform to what is generally known about human decision making.⁵⁶ However, even if people are sometimes motivated by unconscious beliefs, is it reasonable to hold them liable for such beliefs? The law might very well enact a high threshold of proof, one that makes discrimination actionable only when it is a product of specific intent. Under this interpretation, bias must be consciously formed.

If Title VII extends to implicit motivations, another issue arises concerning how this might be handled as a practical matter. After all, if large numbers of people are infused with implicit biases, use of this evidence would appear to open the floodgates to litigation. But there is little reason to fear this outcome. The subject of mental states is an old one in the law and the edifice continues to stand. For instance, courts and legislatures regularly distinguish between *honest* beliefs and *reasonable* beliefs.⁵⁷ In self-defense cases, for example, the law requires people who use deadly force to believe, among other things, that they confront imminent harm of “death or serious bodily injury.”⁵⁸ Jurisdictions disagree, however, whether this belief should be measured on the basis of the defendant’s subjective honest belief, or what an objectively reasonable person would have believed under similar circumstances.⁵⁹ The subjective test focuses on the circumstances of the individual and inquires merely whether the person honestly believed that deadly force

55. See *supra* notes 30–31 and accompanying text.

56. See *supra* notes 30–31 and accompanying text; *infra* notes 240–41 and accompanying text.

57. See, e.g., CAL. PENAL CODE § 198 (West 2008) (distinguishing between an individual’s honest belief and a reasonable belief in stating that an individual’s beliefs must not only be actually or honestly held, but also be reasonably held in order for an individual’s actions to meet the threshold of excusable self-defense).

A bare fear of the commission of any of the offenses mentioned in subdivisions 2 and 3 of Section 197, to prevent which homicide may be lawfully committed, is not sufficient to justify it. But the circumstances must be sufficient to excite the fears of a reasonable person, and the party killing must have acted under the influence of such fears alone.

Id.

58. See, e.g., MODEL PENAL CODE § 3.04(2)(a)(ii) (2007).

59. See, e.g., *People v. Trevino*, 246 Cal. Rptr. 357, 359 (Cal. Ct. App. 1988) (stating that it is well-settled law that exculpation by self-defense requires “an honest *and* reasonable belief in the need to defend” (citations omitted)); *Linsley v. State*, 101 So. 273, 275 (Fla. 1924) (noting that to claim self-defense “circumstances must be such as to induce a reasonably cautious and prudent man to believe that the danger was actual and the necessity was real”); *Sate v. Low*, No. 20050807, 2008 WL 2572880, *8 (Utah 2008) (noting that the distinction between perfect and imperfect self-defense is whether or not the defendant possessed an honest and reasonable belief or just an honest belief that force was necessary).

was necessary.⁶⁰ It does not matter that the person was wrong, or even that a reasonable person in the same circumstances would have believed otherwise. Objective tests, in comparison, go beyond the individual person's beliefs about the event, and ask whether that person acted reasonably under the circumstances.⁶¹

In effect, the explicit bias rule is akin to employing the subjective honesty test. If defendants honestly believed that their decisions were motivated by legitimate grounds for taking the negative action complained of, they would not be liable. As a policy matter, this test operates to the benefit of defendants (civil and criminal), since they are excused for their conduct, even though they might have acted in an objectively unreasonable fashion, so long as they acted honestly. In many legal contexts, however, this subjective approach is disfavored.⁶² It does not create incentives for people to adjust their behavior to a reasonable baseline of acceptable conduct.⁶³

The classic objective reasonable person test could be used to determine whether the plaintiff's protected group status was a motivating factor in the negative employment decision. This standard would not open the floodgates to litigation or permit specious forms of proof. Indeed, the parties would essentially litigate cases in the same way as they do now. However, the trier of fact would consider the negative employment decision in a broader light, and evaluate the employer's

60. See, e.g., *State v. Melchior*, 381 N.E.2d 195, 199 (Ohio 1978) (describing the elements of Ohio's subjective self-defense test as: "To establish self-defense, the following elements must be shown: (1) the slayer was not at fault in creating the situation giving rise to the affray, (2) the slayer has a bona fide belief that he was in imminent danger of death or great bodily harm and that his only means of escape from such danger was in the use of such force, and (3) the slayer must not have violated any duty to retreat or avoid the danger." (citations omitted)).

61. See, e.g., *State v. Bult*, 989 S.W.2d 730, 732 (Tenn. Crim. App. 1998) (explaining that self-defense "not only entail[s] what a defendant actually believes, but . . . as well, what is a reasonable belief under the circumstances. This means that the defendant's conduct and mental state must meet an objective standard of reasonableness for the conduct to be justified under these statutory defenses.").

62. See, e.g., *Murray v. Carrier*, 477 U.S. 478, 487-88 (1986) (rejecting a subjective test for determining "cause" for procedural default in federal habeas corpus cases); *Berkemer v. McCarty*, 468 U.S. 420, 442 n.35 (1984) (explaining, in the context of determining custody for possible Fifth Amendment *Miranda* violations, why "an objective, reasonable-man test is appropriate because, unlike a subjective test, it 'is not solely dependent either on the self-serving declarations of the police officers or the defendant nor does it place upon the police the burden of anticipating the frailties or idiosyncracies of every person whom they question'" (citing *People v. P.*, 233 N.E.2d 225, 260 (N.Y. 1967))); *United States v. Pen-Olin Chem. Co.*, 378 U.S. 158, 174 (1964) (explaining why subjective tests are inappropriate for determining potential competition in antitrust actions).

63. See, e.g., *United States v. Piva*, 870 F.2d 753, 757 (1st Cir. 1989) (noting that an objective test is more appropriate than a subjective test for evaluating the defense of withdrawal for conspiracy charges: "[a]n objective test is the more appropriate one since it would fit the rationale for the asserted defense of withdrawal, which is to create an incentive for persons either to report and prevent the commission of a crime or to refrain from actually participating in it").

explanation of his or her motivation against the background of the phenomenon that people very often act according to preconceptions and biases. Where implicit biases operate unfettered by institutional safeguards, defendants under Title VII might similarly be held accountable.

B. LEGAL FIT

If a reasonable person test is the proper interpretation of Title VII, general scientific evidence of implicit bias might very well assist the trier of fact in determining whether such bias was a motivating factor in a particular case. For purposes of discussing legal fit, we can assume the basic validity of the science, and ask simply whether it *prima facie* is relevant to the applicable law. In considering this question, the science has to be evaluated in two separate, albeit related, respects.

Science and law approach empirical issues very differently. As one of the Authors has observed: "While science attempts to discover the universals hiding among the particulars, trial courts attempt to discover the particulars hiding among the universals."⁶⁴ This division between the general and the specific corresponds to the two essential ways scientific research might legally fit in a case.

Consider the example of the reliability of cross-racial eyewitness identifications. Scientific research on this subject generally tests the straightforward hypothesis that such identifications are less reliable than same race identifications and indicates fairly clearly that, on average, people find identifying those of a different race to be a more difficult task than identifying someone from the same race.⁶⁵ The ultimate legal question, however, is whether a particular identification was correct. Is evidence of the general phenomenon relevant to a fact finder's determination of the specific question? Virtually all courts agree that it is, since it provides contextual information that might help fact finders determine the accuracy of the identification. Obviously, not all cross-racial identifications are inaccurate, but the data gives fact finders information they can combine with other evidence in order to decide the specific question whether a particular eyewitness identification was correct.

64. DAVID L. FAIGMAN, *LEGAL ALCHEMY: THE USE AND MISUSE OF SCIENCE IN THE LAW* 69 (1999).

65. See Gary L. Wells, *Eyewitness Identifications: Scientific Status*, in *MODERN SCIENTIFIC EVIDENCE*, *supra* note 23, at § 16:30. Still, many courts do not routinely admit eyewitness identification expert testimony. See, e.g., *United States v. Carter*, 410 F.3d 942, 950 (7th Cir. 2005) (citing *United States v. Hall*, 165 F.3d 1095, 1104-05 (7th Cir. 1999)). Their objection, however, is not to the relevance of the science. *Id.* Courts that do not admit such evidence rely primarily on the ground that jurors already understand the dangers of eyewitness identification. *Id.*

In other contexts, experts seek to testify not only to a general phenomenon established by empirical evidence, but also to whether a particular case is an instance of that phenomenon. Consider, for example, a tort case in which the plaintiff claims that her lung cancer is attributable to secondhand smoke. The plaintiff must first introduce evidence demonstrating the general relationship between secondhand smoke and lung cancer. Like eyewitness identification, this proof will ultimately have to be judged on its merits. Since testing such general propositions is the ordinary business of science, this is a fairly straightforward task. However, the plaintiff will also seek to introduce testimony that secondhand smoke was the cause of her lung cancer. This task is not a routine aspect of scientific investigation, and thus presents considerable challenges to both the experts and the courts.⁶⁶ In the secondhand smoke example, while scientific research might demonstrate that exposure to smoke increases the likelihood of developing lung cancer, most cases of lung cancer are not attributable to that cause. Just as skiing might lead to an increased risk of a broken leg, all broken legs cannot be attributed to skiing. In many contexts, while science can identify factors that increase the likelihood of injury, it provides little assistance in identifying which injuries were caused by those factors. Yet, despite the limitations inherent in the science, courts are obligated to make case specific determinations. Whether expert testimony should be admitted to assist this obligation depends on the validity of the methods and principles employed in the respective case.⁶⁷ If an expert can demonstrate the validity of both the general science (i.e., factor X causes or is associated with condition Y in populations) and specific applications of that science (i.e., a valid methodology permits an expert to determine when a specific instance of condition Y was caused by factor X), then the expert (or experts) should be allowed to testify to both.⁶⁸ However, if the state of the art of the science only permits expert opinion regarding the general science, it should be so limited.⁶⁹

Proof regarding implicit bias is like all other expert evidence in that it might be admitted to assist fact finders generally, or both generally and specifically. As a *prima facie* matter, the research has the potential to operate at both levels, if the science can bear it out. As Part II indicates, research on implicit bias parallels that of eyewitness identification, in

66. See David L. Faigman, *The Limits of Science in the Courtroom*, in *BEYOND COMMON SENSE: PSYCHOLOGICAL SCIENCE IN THE COURTROOM* 306–07 (Eugene Borgida & Susan T. Fiske eds., 2007).

67. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592–93 (1993).

68. See generally, 1 *MODERN SCIENTIFIC EVIDENCE*, *supra* note 23, at § 1.18.

69. It should perhaps go without saying that if there is no general proof of an association between factor X and condition Y, there can be no valid specific proof that factor X caused condition Y in a particular case. *Id.*

that it largely makes no claim to individualized assessments.⁷⁰ In Part III we return to consider the import of the research in order to determine whether, and how, it scientifically fits the applicable law.

II. THE PSYCHOLOGY AND SOCIOLOGY OF IMPLICIT BIAS

The commonsense understanding of human motivation is that in order to discover the motivating factors driving an individual's decisions and actions one simply has to ask him or her. This understanding rests on the assumption that (a) people have accurate introspective access to their motivations, cognitions, and behaviors; and (b) they are typically willing to report them honestly.⁷¹ As we will demonstrate below, social psychological research over the past fifty years has found that both of these assumptions are deeply flawed.

A. THE FALSE ASSUMPTION ABOUT THE ACCURACY OF SELF-REPORTS

One of the most important discoveries in empirical social psychology in the twentieth century is that people's perceptions and behavior are often shaped by factors that lie outside their awareness and cannot be fully understood by intuitive methods such as self-reflection.⁷² In a highly influential article entitled *Telling More Than We Can Know: Verbal Reports on Mental Processes*, Nisbett and Wilson articulated two stages in the decision-making process where individuals' ability to explain their own motivations and cognitions is surprisingly limited.⁷³ First, people are often unaware of the effect particular stimuli have on their own higher-order inferential judgments.⁷⁴ That is, they cannot identify what variables systematically caused their judgment.⁷⁵ This may happen because the actual causal variable seems innocuous and irrelevant to the judgment, or because it is separated in time from the judgment.⁷⁶ Applying this idea to the context of employment decisions, decision makers may be unaware

70. See discussion *infra* Part II.

71. See WILSON, *supra* note 37.

72. Joyce Ehrlinger et al., *Peering Into the Bias Blind Spot: People's Assessments of Bias in Themselves and Others*, 31 PERS'LTY & SOC. PSYCHOL. BULL. 680, 681 (2005); Anthony Greenwald & Mahzarin R. Banaji, *Added, Implicit Social Cognition: Attitudes, Self-esteem, and Stereotypes*, 102 PSYCHOL. REV. 4, 4 (1995).

73. Richard E. Nisbett & Timothy D. Wilson, *Telling More Than We Can Know: Verbal Reports on Mental Processes*, 84 PSYCHOL. REV. 234, 242-43 (1977).

74. *Id.*

75. See, e.g., Leon Festinger & James M. Carlsmith, *Cognitive Consequences of Forced Compliance*, 58 J. AB. & SOC. PSYCHOL. 203, 203-04 (1959); George R. Goethals, & R.F. Reckman, *The Perception of Consistency in Attitudes*, 9 J. EXPMT'L SOC. PSYCHOL. 491 (1973); Bibb Latane & John M. Darley, *Group Inhibition of Bystander Intervention in Emergencies*, 10 J. PERS'LTY & SOC. PSYCHOL. 215, 217 (1968); Richard E. Nisbett & Stanley Schachter, *The Cognitive Manipulation of Pain*, 2 J. EXPMT'L SOC. PSYCHOL. 227 (1966); Stuart Valins & Alice A. Ray, *Effects of Cognitive Desensitization on Avoidance Behavior*, 7 J. PERS'LTY & SOC. PSYCHOL. 345, 345 (1967).

76. Nisbett & Wilson, *supra* note 73, at 236-37.

that the sex of a job applicant or her pregnancy status (the causal variables) influenced their judgments of the applicant's competence and fit for the job (the effect) because these variables seemed innocuous and unrelated to the decision at hand.

Second, when asked to report on what motivated their judgment, decision makers cannot easily backtrack and reconstruct the exact thought process that led from the stimulus (e.g., encountering the job candidate) to the judgment (e.g., should we hire her?).⁷⁷ Instead, they base their explanation on *a priori* naïve causal theories about the likely causal connection between stimulus and response, which may be erroneous.⁷⁸ Thus, self-generated explanations of one's own thought process are often no more accurate than that of outside observers who have little knowledge of the mental content of another person. In an interesting study illustrating this phenomenon, Nisbett and Bellows asked participants to evaluate a job candidate after reading a fake application portfolio, in which several of the job candidate's characteristics were experimentally manipulated (e.g., her physical appearance, academic credentials, etc.).⁷⁹ Participants were then asked to report the extent to which each of these characteristics was a motivating factor in their evaluations of the candidate.⁸⁰ Another group of "observer participants" who had access to an abbreviated application portfolio were asked to predict how the same characteristics would influence other people's judgments.⁸¹ Results showed that participants' self-reports about the effects of the manipulated characteristics on their own judgments were remarkably inaccurate, and no different from the predictions of observers who had impoverished information.⁸² These data raise doubts about people's introspective access to their own cognitive process and their ability to report on it accurately. In the context of Title VII cases, these data imply that if asked to explain the motivating factors that drove their evaluations of a particular job candidate, decision makers may not be able to faithfully reconstruct their process of thinking; instead they may answer the question by relying on heuristics about what factors typically motivate hiring decisions. A job candidate's sex or pregnancy status may be unmentioned as motivating factors because these characteristics are absent from the decision maker's own theory of

77. *Id.* at 242–43.

78. See, e.g., Daniel Kahneman & Amos Tversky, *On the Psychology of Prediction*, 80 PSYCHOL. REV. 237, 237 (1973); Richard E. Nisbett & Nancy Bellows, *Verbal Reports About Causal Influences on Social Judgments: Private Access Versus Public Theories*, 35 J. PERS'LTY & SOC. PSYCHOL. 613, 613–14 (1977).

79. Nisbett & Bellows, *supra* note 78, at 617.

80. *Id.* at 618.

81. *Id.*

82. *Id.* at 618–20.

decision making and the decision maker is therefore unaware of being influenced by it.

B. THE FALSE ASSUMPTION ABOUT THE HONESTY OF SELF-REPORTS

A second characteristic of the commonsense understanding of human motivation is that people are typically willing to report the reasons guiding their thoughts and actions honestly. However, numerous empirical studies have debunked this assumption, especially when it comes to socially sensitive topics where there are clear social norms about “correct” responses (social desirability bias) or when the topic motivates participants to present their attitudes, motivations, and actions in the best possible light, consistent with their conscious values (self-presentation bias).⁸³ In a now classic study, participants were asked to report their beliefs about African Americans under one of two conditions.⁸⁴ In the control condition they responded to a typical survey questionnaire.⁸⁵ In the experimental condition they responded to the same questionnaire while hooked up to a “bogus pipeline” which was described as a physiological instrument that gave the experimenter access to participants’ “true” beliefs.⁸⁶ Results revealed that participants reported more favorable attitudes toward African Americans when they thought the experimenter could detect their “true” thoughts compared to the control condition where they thought the experimenter had no access to their true thoughts, suggesting that the former self-reports were contaminated by social desirability.⁸⁷

Doubts about the accuracy of self-reflection and the honesty of self-reports prompted social psychologists to seek alternative means of identifying motivating factors that influence people’s attitudes, beliefs, and behaviors. To that end, carefully controlled studies tested the root

83. Faye Crosby et al., *Recent Unobtrusive Studies of Black and White Discrimination and Prejudice: A Literature Review*, 87 PSYCHOL. BULL. 546, 546–47 (1980); Devah Pager & Lincoln Quillian, *Walking the Talk? What Employers Say Versus What They Do*, 70 AM. SOC. REV. 355, 355 (2005); Harold Sigall & Richard Page, *Current Stereotypes: A Little Fading, a Little Faking*, 18 J. PERS’LTY & SOC. PSYCHOL. 247, 247–48 (1971) [hereinafter Sigall & Page, *Current Stereotypes*]; Harold Sigall & Richard Page, *Reducing Attenuation in the Expression of Interpersonal Affect via the Bogus Pipeline*, 35 SOCIOMETRY 629, 629–30 (1972); Richard Tourageau & Ting Yan, *Sensitive Questions in Surveys*, 133 PSYCHOL. BULL. 859, 859 (2007).

84. Sigall & Page, *Current Stereotypes*, *supra* note 83, at 248.

85. *See id.*

86. *Id.*

87. *Id.* at 254; *see also* Jason A. Nier, *How Dissociated Are Implicit and Explicit Racial Attitudes? A Bogus Pipeline Approach*, 8 GROUP PROC’S & INTERGROUP REL. 39 (2005); E. Ashby Plant et al., *The Bogus Pipeline and Motivations to Respond Without Prejudice: Revisiting the Fading and Faking of Racial Prejudice*, 6 GROUP PROC’S & INTERGROUP REL. 187, 188 (2003); Vincent Y. Yzerbyt et al., *Social Judgeability and the Bogus Pipeline: The Role of Naïve Theories of Judgment in Impression Formation*, 15 Soc. Cog. 56, 57 (1998).

cause of people's judgments and behaviors by creating situations where all potential causal factors were held constant except for the one hypothesized factor which was allowed to vary systematically (e.g., the sex of the individual being evaluated).⁸⁸ These studies employed a variety of measures to detect the presence of implicit bias in evaluations of individuals based on his or her sex or race. As a result, the overall findings did not depend on the validity of a single measure of implicit bias. The next Part reviews some of the studies most relevant to employment discrimination cases based on gender and caregiver status. In some of these studies participants were likely to be unaware that the gender or caregiver status of the individual being appraised was systematically biasing their judgments while in other studies they may have been quite aware of their bias.

C. RESEARCH EVIDENCE ON GENDER STEREOTYPES AND DISCRIMINATION

1. *Gender Stereotypes: Women are Communal and Men are Agentic*

The most popular theoretical explanation of the origin of gender stereotypes comes from Eagly's social-role theory,⁸⁹ and Eagly and Karau's role incongruity theory,⁹⁰ which focus on social roles as the initiators of gender stereotypes: "social roles are socially shared expectations [about people] who occupy a certain social position or are members of a particular social category, [while] gender roles are consensual beliefs about the attributes of women and men."⁹¹ These consensual beliefs include both

descriptive norms, which are consensual expectations about what members of a group actually do, and *injunctive norms*, which are consensual expectations about what a group of people ought to do or ideally would do. . . . The term *gender role* thus refers to the collection of both descriptive and injunctive expectations associated with women and men.

According to social role theory, perceivers infer that there is a correspondence between the types of actions people engage in and their inner dispositions.⁹²

88. See, e.g., Meredith Pugh & Ralph Wahrman, *Neutralizing Sexism in Mixed Sex Groups: Do Women Have to be Better Than Men?*, 88 AM. J. SOC. 746 (1983).

89. ALICE H. EAGLY, SEX DIFFERENCES IN SOCIAL BEHAVIOR: A SOCIAL-ROLE INTERPRETATION 3 (1987).

90. Alice H. Eagly & Steven J. Karau, *Role Congruity Theory of Prejudice Toward Female Leaders*, 109 PSYCHOL. REV. 573, 576 (2002).

91. *Id.* at 574 (citations and footnotes omitted).

92. *Id.* (footnotes omitted); see also EAGLY, *supra* note 89, at 120; Alice. H. Eagly et al., *Social Role Theory of Sex Differences and Similarities: A Current Appraisal*, in THE DEVELOPMENTAL PSYCHOLOGY OF GENDER 123-74 (Thomas Eckes ed., 2000).

There is substantial evidence for both descriptive and injunctive gender stereotypes. With regard to descriptive gender stereotypes, using American and international samples of adults, students, and children from thirty countries, numerous studies have found that men are typically judged as more agentic, or achievement oriented, than women, whereas women are typically judged as more communal, or interpersonally oriented than men.⁹³ Stereotypes of men as more agentic and women as more communal contain not only a horizontal dimension of difference between the sexes but also a vertical dimension of status inequality between men and women.⁹⁴ Masculine traits are seen as having higher status than feminine traits.⁹⁵ Furthermore, these status disparities are associated with differences in presumed competence.⁹⁶ Men are generally seen as more competent at the “things that count most” and more worthy of high status roles than are women, even though each sex is thought to have its specialized set of skills.⁹⁷ Stereotypic assumptions about status and competence differences between men and women can be especially consequential in employment settings.

These gender stereotypes are common knowledge in the United States, in that almost everyone is aware of these beliefs, and people presume that most others hold them.⁹⁸ In addition to knowing these

93. JOHN E. WILLIAMS & DEBORAH L. BEST, MEASURING SEX STEREOTYPES: A MULTINATION STUDY 22 (1990); Kay Deaux & Marianne LaFrance, *Gender*, in THE HANDBOOK OF SOCIAL PSYCHOLOGY 789 (Daniel Gilbert et al., 4th ed. 1998); Amanda B. Diekmann & Alice H. Eagly, *Stereotypes as Dynamic Constructs: Women and Men in the Past, Present, and Future*, 26 PERS'LTY & SOC. PSYCHOL. BULL. 1171, 1172 (2000); Alice H. Eagly & Valerie J. Steffen, *Gender Stereotypes Stem from the Distribution of Women and Men into Social Roles*, 46 J. PERS'LTY & SOC. PSYCHOL. 735, 736 (1984); Diane N. Ruble & Carol L. Martin, *Gender Development*, in THE HANDBOOK OF CHILD PSYCHOLOGY 933 (William Damon et al. eds., 4th ed. 1998); John E. Williams et al., *Pancultural Gender Stereotypes Revisited: The Five Factor Model*, 40 SEX ROLES 513, 515 (1999).

94. Michael Conway et al., *Status, Communitality, and Agency: Implications for Stereotypes of Gender and Other Groups*, 71 J. PERS'LTY & SOC. PSYCHOL. 25, 25 (1996); David G. Wagner & Joseph Berger, *Gender and Interpersonal Task Behaviors: Status Expectation Accounts*, 40 SOC. PERSP. 1, 3-4 (1997).

95. Peter Glick et al., *Bad but Bold: Ambivalent Attitudes Toward Men Predict Gender Inequality in 16 Nations*, 86 J. PERS'LTY & SOC. PSYCHOL. 713, 715 (2004).

96. Susan T. Fiske et al., *A Model of (Often Mixed) Stereotype Content: Competence and Warmth Respectively Follow from Perceived Status and Competition*, 82 J. PERS'LTY & SOC. PSYCHOL. 878, 880 (2002); Wagner & Berger, *supra* note 94, at 8.

97. See Peter Glick & Susan T. Fiske, *Sexism and Other "Isms": Interdependence, Status, and the Ambivalent Content of Stereotypes*, in SEXISM AND STEREOTYPES IN MODERN SOCIETY 193, 198 (William B. Swann, Jr. et al. eds., 1999); Lynne M. Jackson et al., *Contemporary Sexism and Discrimination: The Importance of Respect for Men and Women*, 27 PERS'LTY & SOC. PSYCHOL. BULL. 48, 54 (2001); Lisa Slattery Rashotte & Murray Webster, Jr., *Gender Status Beliefs*, 34 SOC. SCI. RES. 618, 630-31 (2005); Wagner & Berger, *supra* note 94, at 10-14.

98. See Alice H. Eagly et al., *Social Role Theory of Sex Differences and Similarities: A Current Appraisal*, in THE DEVELOPMENTAL SOCIAL PSYCHOLOGY OF GENDER 123, 132-36 (Thomas Eckes & Hanns M. Trautner eds., 2000); Diekmann & Eagly, *supra* note 93 at 1183-84.

cultural stereotypes, people sometimes explicitly endorse them when describing women in general as compared to men in general.⁹⁹ At other times, they eschew gender stereotypes explicitly in favor of egalitarian beliefs; however, stereotypes continue to emerge subtly when implicit beliefs are measured indirectly.¹⁰⁰

Studies using a variety of response latency tasks to measure implicit gender stereotypes indicate that both men and women associate agentic traits (e.g., ambitious, competent) and professional roles (e.g., doctor, leader) more quickly and automatically after seeing men compared to after seeing women; conversely they identify communal traits (e.g., nurturing, supportive) and roles (e.g., parent, nurse) more quickly and automatically after seeing women compared to after seeing men.¹⁰¹ One measure that has shown these effects is the well known Implicit Association Test (IAT).¹⁰² Importantly, the same findings have been obtained using other response latency tasks as well, such as semantic priming tasks and lexical decision tasks.¹⁰³ In all of these response latency studies, faster responses to a social group (e.g., women, men) and particular traits or roles (e.g., parent, professional) have been interpreted to mean that those types of traits and roles are preferentially and

99. See Eagly et al., *supra* note 98, at 123, 132–36; Diekmann & Eagly, *supra* note 93, at 1183–84.

100. See Mahzarin R. Banaji & Curtis D. Hardin, *Automatic Stereotyping*, 7 PSYCHOL. SCI. 136, 137–38 (1996); Mahzarin R. Banaji & Anthony G. Greenwald, *Implicit Gender Stereotyping in Judgments of Fame*, 68 J. PERS'LTY & SOC. PSYCHOL. 181, 181 (1995); Mahzarin R. Banaji et al., *Implicit Stereotyping in Person Judgment*, 65 J. PERS'LTY & SOC. PSYCHOL. 272, 272–73 (1993); Irene V. Blair & Mahzarin R. Banaji, *Automatic and Controlled Processes in Stereotype Priming*, 70 PERS'LTY & SOC. PSYCHOL. 1142, 1142 (1996); Nilanjana Dasgupta & Shaki Asgari, *Seeing is Believing: Exposure to Counterstereotypic Women Leaders and its Effect on Automatic Gender Stereotyping*, 40 J. EXPMT'L SOC. PSYCHOL. 642, 643–44 (2004); Kerry Kawakami & John F. Dovidio, *The Reliability of Implicit Stereotyping*, 27 PERS'LTY & SOC. PSYCHOL. BULL. 212, 212–13 (2001); Gordon B. Moskowitz et al., *Preconscious Control of Stereotype Activation Through Chronic Egalitarian Goals*, 77 J. PERS'LTY & SOC. PSYCHOL. 167, 167 (1999); Nosek et al., *supra* note 51, at 101–02; Laurie A. Rudman et al., *Implicit Self-Concept and Evaluative Implicit Gender Stereotypes: Self and Ingroup Share Desirable Traits*, 27 PERS'LTY & SOC. PSYCHOL. BULL. 1164, 1164–65 (2001); Laurie A. Rudman & Peter Glick, *Prescriptive Gender Stereotypes and Backlash Toward Agentic Women*, 57 J. SOC. ISSUES 743, 744 (2001).

101. See Blair & Banaji, *supra* note 100, at 1147; Irene V. Blair et al., *Imagining Stereotypes Away: The Moderation of Implicit Stereotypes Through Mental Imagery*, 81 J. PERS'LTY & SOC. PSYCHOL. 828, 837–38 (2001); Dasgupta & Asgari, *supra* note 100, at 654–55; Kawakami & Dovidio, *supra* note 100, at 221–22; Nosek et al., *supra* note 51, at 107–09.

102. Anthony G. Greenwald et al., *Measuring Individual Differences in Implicit Cognition: The Implicit Association Test*, 74 J. PERS'LTY & SOC. PSYCHOL. 1464, 1473–74 (1998).

103. See Banaji & Hardin, *supra* note 100, at 139–40; Blair & Banaji, *supra* note 100; Kawakami & Dovidio, *supra* note 100, at 220–21; Kristi M. Lemm et al., *Gender Picture Priming: It Works with Denotative and Connotative Primes*, 23 SOC. COG. 218, 218–19 (2005); C. Neil Macrae et al., *On the Activation of Social Stereotypes: The Moderating Role of Processing Objectives*, 33 J. EXPMT'L SOC. PSYCHOL. 471, 486 (1997); Moskowitz et al., *supra* note 100, at 170.

automatically activated in people's minds when they encounter one group more so than the other.¹⁰⁴

Other studies have used different implicit measures to capture stereotyping (e.g., memory tasks, linguistic tasks, construct accessibility paradigms) and found conceptually similar results.¹⁰⁵ In several of these studies both women and men expressed gender stereotypes equally strongly at an implicit level; however when the same participants' explicit beliefs were measured using questionnaires, women consciously endorsed gender stereotypes less than their male peers.¹⁰⁶ These types of findings were initially obtained from student samples in laboratory studies, but the results were subsequently replicated in large internet-based studies that recruited over 38,000 participants who were highly diverse in terms of age, education, geographical region, profession, and nationality.¹⁰⁷

It is important to underscore, therefore, that scientific evidence that cultural stereotypes can create implicit biases in individuals' judgments and behavior is not limited to a single measurement tool or method (e.g., the IAT).¹⁰⁸ Rather, in keeping with principles of good science, researchers have utilized multiple methods to rule out limitations of specific measurement tools and to generalize findings across many tools. Studies have used a variety of different methodologies and converged on the common finding that implicit gender stereotypes emerge in people's judgments and decisions when measured in ways that bypass decision makers' awareness of potential bias.¹⁰⁹ For example, several studies found that perceivers remember gender stereotypic information better than counterstereotypic or neutral information without being aware of their differential memory.¹¹⁰ Moreover, they draw spontaneous inferences to fill in unspecified details of men and women's social behavior in ways

104. See Banaji & Hardin, *supra* note 100, at 137-39; Blair & Banaji, *supra* note 100, at 1142, 1145-48; Dasgupta & Asgari, *supra* note 100, at 642, 646-47, 650-51; Kawakami & Dovidio, *supra* note 100, at 212; Moskowitz et al., *supra* note 100, at 167, 173-74; Rudman et al., *supra* note 100; Rudman & Glick, *supra* note 100, at 754-55; Lemm et al., *supra* note 100, at 226-28, 231-32; Macrae et al., *supra* note 103, at 478-82.

105. See Banaji & Greenwald, *supra* note 100, at 192-93; Banaji et al., *supra* note 100, at 278-79; Richard L. Marsh et al., *Gender and Orientation Stereotypes Bias Source-Monitoring Attributions*, 14 *MEMORY* 148, 151-53 (2006); William von Hippel et al., *On the Role of Encoding Processes in Stereotype Maintenance*, in 27 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* 177-254 (Mark Zanna ed.) (1995).

106. See generally Blair & Banaji, *supra* note 100, at 1153; Nosek et al., *supra* note 51, at 110.

107. Nosek et al., *supra* note 51, at 109-10.

108. See, e.g., Mitchell & Tetlock, *supra* note 1, at 1025.

109. See Donald E. Campbell & Donald W. Fiske, *Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix*, 56 *PSYCHOL. BULL.* 81, 83 (1959); Lee J. Cronbach & Paul E. Meehl, *Construct Validity in Psychological Tests*, 52 *PSYCHOL. BULL.* 281, 286 (1955).

110. See Marsh et al., *supra* note 105, at 159; von Hippel et al., *supra* note 105.

that are consistent with gender stereotypes.¹¹¹ Again, this occurred without awareness or malicious intent.¹¹² As a case in point, Marsh and colleagues found systematic differences in what people remembered versus forgot depending on the speaker's sex and what he or she said.¹¹³ Participants were presented with assertive or neutral statements that were allegedly made by a man or a woman.¹¹⁴ When later asked to recall who made what statement, they were more likely to misremember the source of an assertive statement when the speaker was female rather than male.¹¹⁵ These gender-biased memory errors occurred regardless of participants' degree of distraction or their capacity to pay attention, which suggests that these gender-biased errors were occurring unintentionally.¹¹⁶

Sociological studies of the effects of the status and competence assumptions embedded in gender stereotypes have also demonstrated that these stereotypes can implicitly bias judgments and behavior, often without the decision maker's awareness.¹¹⁷ The simple knowledge that the person being judged is a man or women results in the perceiver evaluating the same performance as better or worse, according to gendered expectations.¹¹⁸ The subjects in most of these experiments were college undergraduates.¹¹⁹ However, these experimental findings have been replicated over decades of undergraduate populations, and have also been shown to reflect the findings of similar experiments conducted using representative random samples.¹²⁰

These sociological studies are associated with Expectation States Theory, which is the most widely accepted theory of how status assumptions associated with group stereotypes affect people's behavior and judgments in task-oriented situations such as in the workplace.¹²¹

111. David Dunning & David A. Sherman, *Stereotypes and Tacit Inference*, 73 J. PERS'LTY & SOC. PSYCHOL. 459, 459 (1997).

112. See, e.g., *id.* at 469–70 (discussing whether or not “Tacit Inferences [are] Implicit”).

113. Marsh et al., *supra* note 105, at 151.

114. *Id.* at 150–51, 154, 156–57.

115. *Id.* at 151–52, 155–56.

116. See *id.* at 158; Banaji & Greenwald, *supra* note 100, at 185.

117. See generally Cecilia L. Ridgeway, *Gender, Status, and Leadership*, 57 J. SOC. ISSUES 637, 637–56 (2001); Cecilia L. Ridgeway & Chris Bourg, *Gender as Status: An Expectation States Theory Approach*, in *THE PSYCHOLOGY OF GENDER* 217 (Alice H. Eagly et al. eds., 2004); Wagner & Berger, *supra* note 94, at 1–32.

118. See Ridgeway, *supra* note 117, at 646; Ridgeway & Bourg, *supra* note 117, at 228.

119. See Pugh & Wahrman, *supra* note 88, at 754; Wagner & Berger, *supra* note 94, at 7–10.

120. See generally Shelley J. Correll, *Gender and the Career Choice Process: The Role of Biased Self-Assessments*, 106 AM. J. SOC. 1691, 1702–03 (2001); Shelley J. Correll, *Constraints into Preferences: Gender, Status, and Emerging Career Aspirations*, 69 AM. SOC. REV. 93, 101–02 (2004).

121. See generally JOSEPH BERGER ET AL., *STATUS CHARACTERISTICS AND SOCIAL INTERACTION* 38–39 (1977); Joseph Berger et al., *Status Organizing Processes*, 6 ANN. REV. SOC. 479, 480 (1980); David Wagner & Joseph Berger, *Expectation States Theory: An Evolving Research Program*, in *NEW*

This theory argues that the status implications of gender (or other status valued group characteristics) become salient when people in the situation differ on the characteristic (e.g., a mixed sex setting) or when the task or work domain is stereotypically linked to one sex or another (i.e., a gendered task or setting).¹²² When the status implications of gender stereotypes are salient, they shape performance expectations that individuals form for one another in task-oriented settings such as the workplace. The more gendered the task or work domain, the stronger the impact of gender stereotypes on performance expectations.¹²³ As a result, performance expectations tend to modestly favor men over otherwise similar women in mixed-sex but gender neutral professions. For professions stereotypically linked to men (e.g., engineering, the military), performance expectations more strongly favor men over women. For others that are stereotypically linked to women (e.g., nursing), performance expectations slightly favor women, except for positions of authority in which men are favored.¹²⁴ These gender-biased performance expectations unconsciously bias perceptions of others' actual competence and merit.¹²⁵ Biased assumptions about competence, in turn, affect people's willingness to listen to a person's opinions, to be influenced by that person and to recommend the person for rewards. Several decades of research support this pattern of implicit gender bias in judgments of competence and the granting of influence and rewards.¹²⁶

Aside from descriptive stereotypes, injunctive or prescriptive gender stereotypes have also been found in empirical research such that people express greater approval for communal qualities in the "ideal woman" and agentic qualities in the "ideal man,"¹²⁷ and they express greater approval for gender differentiated roles and responsibilities for women and men.¹²⁸ Moreover, people increasingly judge certain behaviors as appropriate for only one sex if those behaviors are typically enacted by

DIRECTIONS IN CONTEMPORARY SOCIOLOGICAL THEORY 41 (Joseph Berger & Morris Zelditch eds., 2002).

122. See Ridgeway & Bourg, *supra* note 117, at 225; Wagner & Berger, *supra* note 94, at 4.

123. See Ridgeway, *supra* note 117, at 646; Ridgeway & Bourg, *supra* note 117, at 225.

124. Cecilia L. Ridgeway & Paula England, *Sociological Approaches to Sex Discrimination in Employment*, in *SEX DISCRIMINATION IN THE WORKPLACE* 194-95 (Faye J. Crosby et al. eds, 2007).

125. See Ridgeway, *supra* note 117, at 643.

126. See James E. Driskell & Brian Mullen, *Status, Expectations, and Behavior: A Meta-Analytic Review and Test of the Theory*, 16 PERS'LTY & SOC. PSYCHOL. BULL. 541, 542-43 (1990). See generally, Ridgeway & Bourg, *supra* note 117.

127. See WILLIAMS & BEST, *supra* note 93, at 279-81 (1990). See generally JANET T. SPENCE & ROBERT L. HELMREICH, *MASCULINITY AND FEMININITY: THEIR PSYCHOLOGICAL DIMENSIONS, CORRELATES, AND ANTECEDENTS* (1978).

128. See SPENCE & HELMREICH, *supra* note 127; Peter Glick & Susan T. Fiske, *The Ambivalent Sexism Inventory: Differentiating Hostile and Benevolent Sexism*, 70 J. PERS'LTY & SOC. PSYCHOL. 491, 493 (1996).

mostly men or mostly women.¹²⁹ Thus, it appears that people tend to think that women and men *ought* to differ, especially in terms of behaviors that are associated with larger sex differences. In these studies, injunctive gender stereotypes about women in general and men in general were explicitly endorsed by participants.¹³⁰

2. *Psychological "Fit" Between Gender Stereotypes and Role Stereotypes*

Just as particular skills and behaviors are differentially associated with women versus men, similarly particular skills and behaviors are differentially associated with social roles. Some social roles are perceived to require communal or interpersonally-oriented skills (e.g., caregivers, nurses, and teachers), whereas others are perceived to require agentic or achievement-oriented traits (e.g., workers, leaders, and managers).¹³¹ When women are in caregiver roles or men are in breadwinner roles, gender stereotypes and social role stereotypes are in sync; the result is the perception of a "natural fit" between the person's inner qualities and role requirements.¹³² However, when women occupy agentic roles (e.g., primary breadwinner), or men occupy communal roles (e.g., primary caregiver), or one individual occupies both roles simultaneously, gender stereotypes and role stereotypes are out of sync; the result is the perception of a "psychological mismatch" between the person's inner qualities and role requirements.¹³³ It is precisely in this situation of psychological mismatch or role incongruity that the status and competence implications of gender stereotypes are most likely to bias people's performance expectations for the mismatched worker.¹³⁴

Role incongruity is evident in the case of professional women in high status jobs and committed workers who are also primary caregivers.¹³⁵ The perceived incongruity between the individual's sex (and the status and competences that it implies), and the requirements of his or her job role, evokes implicit bias in judgments of the person's perceived competence and promise in the role. In some circumstances, the incongruity may also evoke more explicit "backlash" against the mismatched worker.¹³⁶ As our review below shows, most of the research on this issue has specifically focused on evaluations of women in

129. See Eagly & Karau, *supra* note 90, at 573–74.

130. See EAGLY, *supra* note 89, at 12–19; Eagly & Karau, *supra* note 90, at 573–74.

131. See EAGLY, *supra* note 89, at 19–24; Eagly & Karau, *supra* note 90, at 573–74.

132. See sources cited *supra* note 131.

133. See Eagly & Karau, *supra* note 90, at 573–74.

134. Madeline E. Heilman, *Sex Bias in Work Settings: The Lack of Fit Model*, 5 RES. ORG. BEHAV. 269, 269–70 (1983). See generally Eagly & Karau, *supra* note 90.

135. See Eagly & Karau, *supra* note 90, at 579.

136. See *id.*

professional leadership roles.¹³⁷ A smaller body of research has examined evaluations of individuals (women or men) juggling caregiving and professional roles.¹³⁸

D. BIAS AGAINST WOMEN LEADERS

1. *Leadership Roles Are Equated with Masculinity*

People typically construe professional leadership roles in a masculine manner both in terms of the traits associated with these roles (e.g., assertive, ambitious, competitive) and in terms of the physical appearance that is conjured up when thinking about hypothetical leaders.¹³⁹ In early empirical demonstrations of the association between leaders and masculinity, researchers asked male and female managers to give their impressions of women, men, or successful middle managers.¹⁴⁰ Participants perceived successful middle managers to be significantly more similar to their impressions of men in general than women in general.¹⁴¹ In particular, successful managers, like men, were rated as

137. See *infra* notes 139–195 and accompanying text.

138. See SUZZANE M. BIANCHI ET AL., CHANGING RHYTHMS OF AMERICAN FAMILY LIFE 53–56 (2006); JOAN WILLIAMS, UNBENDING GENDER: WHY FAMILY AND WORK CONFLICT AND WHAT TO DO ABOUT IT 1–6, 64–113 (2000); Sarah Avellar & Pamela J. Smock, *Has the Price of Motherhood Declined Over Time? A Cross-Cohort Comparison of the Motherhood Wage Penalty*, 65 J. MARRIAGE & FAM. 597, 603 (2003); Michelle Budig & Paula England, *The Wage Penalty for Motherhood*, 66 AM. SOC. REV. 204, 204 (2001); Kathleen Fuegen et al., *Mothers and Fathers in the Workplace: How Gender and Parental Status Influence Judgments of Job-Related Competence*, 60 J. SOC. ISSUES 747, 747–54 (2004); Michael K. Judiesch & Karen S. Lyness, *Left Behind? The Impact of Leaves of Absence on Managers' Career Success*, 42 ACAD. MGMT. J. 641, 641, 643 (1999); Cecilia, L. Ridgeway & Shelley J. Correll, *Motherhood as a Status Characteristic*, 60 J. SOC. ISSUES 683, 683–84 (2004); Gillian Whitehouse, *Parenthood and Pay in Australia and the UK: Evidence from Workplace Surveys*, 38 J. Soc. 381, 382 (2002).

139. See, e.g., BERNARD M. BASS, BASS & STOGDILL'S HANDBOOK OF LEADERSHIP: THEORY, RESEARCH, AND MANAGERIAL APPLICATIONS 816 (3rd ed., 1990); VERONICA F. NIEVA & BARBARA A. GUTK, WOMEN AND WORK: A PSYCHOLOGICAL PERSPECTIVE 82–92 (1981); Heilman, *supra* note 134, at 271–72; Madeline E. Heilman, *Sex Stereotypes and Their Effects in the Workplace: What We Know and What We Don't Know*, 10 J. SOC. BEHAV. & PERS'LTY 3, 5 (1995); Lenelis Kruse & M. Wintermantel, *Leadership Ms.-Qualified: The Gender Bias in Everyday and Scientific Thinking*, in CHANGING CONCEPTIONS OF LEADERSHIP 171 (Carl F. Graumann & Serge Moscovici eds., 1986); Patricia Yancey Martin, *Gender, Interaction, and Inequality in Organizations*, in GENDER, INTERACTION, AND INEQUALITY 208 (Cecilia L. Ridgeway ed., 1992); Veronica F. Nieva & Barbara A. Gutek, *Sex Effects on Evaluation*, 5 ACAD. MGMT. REV. 267, 267–68 (1980); Belle Rose Ragins & Eric Sundstrom, *Gender and Power in Organizations: A Longitudinal Perspective*, 105 PSYCHOL. BULL. 51, 52 (1989); Virginia E. Schein, *A Global Look at Psychological Barriers to Women's Progress in Management*, 57 J. SOC. ISSUES 675, 678 (2001); Sabine Sczesny et al., *Masculine = Competent? Physical Appearance and Sex as Sources of Gender-Stereotypic Attributions*, 65 SWISS J. PSYCHOL. 15, 16 (2006).

140. Virginia Ellen Schein, *Relationships Between Sex Role Stereotypes and Requisite Management Characteristics Among Female Managers*, 60 J. APPLIED PSYCHOL. 340, 341 (1975) [hereinafter Schein, *Relationships*]; Virginia Ellen Schein, *The Relationship Between Sex Role Stereotypes and Requisite Management Characteristics*, 57 J. APPLIED PSYCHOL. 95, 96 (1973).

141. See Schein, *Relationships*, *supra* note 140, at 341–43.

having a host of agentic characteristics such as competitiveness, self-confidence, objectivity, aggressiveness, ambition, and ability to lead.¹⁴² These findings have been replicated both in the United States¹⁴³ and in other countries including the United Kingdom, Germany, Japan, China, and Singapore.¹⁴⁴ Similar results have emerged from studies in which participants rated managers¹⁴⁵ and political leaders¹⁴⁶ on agentic and communal characteristics.

2. *Female Leaders are Evaluated as Less Leader-Like than Their Male Counterparts*

Because most leadership roles are associated with masculine attributes, and women are seen as possessing fewer of these attributes, women are presumed to be less qualified for these roles than their male peers are. This is the essence of Heilman's lack of fit model of employment discrimination,¹⁴⁷ which is a close cousin of Eagly and Karau's role incongruity theory.¹⁴⁸ The claims made by these models are also consistent with arguments, premised on the expectation-states theory, that there are stronger performance expectation biases against women in male-typed roles or tasks.¹⁴⁹ The perceived lack of fit between the professional role and the female worker's gendered characteristics produces decreased performance expectations for her and increased expectations for her failure on the part of her superiors, which in turn lowers the worker's self-evaluation and her evaluation by others.¹⁵⁰ In line with the lack of fit model, Heilman and her colleagues demonstrated that although male managers rated female managers as more agentic and less communal than women in general, they still thought that female

142. See *id.* at 342–43.

143. See, e.g., Madeline E. Heilman et al., *Has Anything Changed? Current Characterizations of Men, Women, and Managers*, 74 J. APPLIED PSYCHOL. 935, 937 (1989); Douglas Massengill & Nicolas Di Marco, *Sex-Role Stereotypes and Requisite Management Characteristics: A Current Replication*, 5 SEX ROLES 561, 565–66 (1979).

144. Jean Lee & Tan Hwee Hoon, *Business Students' Perceptions of Women in Management—The Case in Singapore*, 24 MGMT. EDUC. & DEV. 415, 424 (1993); Schein, *supra* note 139, at 680–81.

145. See, e.g., Daniel Arkkelin & R. Simmons, *The "Good Manager": Sex-Typed, Androgynous, or Likable?*, 12 SEX ROLES 1187, 1189–94 (1985); Gary N. Powell & D. Anthony Butterfield, *If "Good Managers" Are Masculine, What Are "Bad Managers"?*, 10 SEX ROLES 477, 477–78 (1984); Gary N. Powell & D. Anthony Butterfield, *The "Good Manager": Did Androgyny Fare Better in the 1980s?*, 14 GROUP & ORG. STUD. 216, 217 (1989); Gary N. Powell & D. Anthony Butterfield, *The "Good Manager": Masculine or Androgynous?*, 22 ACAD. MGMT. J. 395, 396–97 (1979).

146. See, e.g., Shirley M. Rosenwasser & Norma G. Dean, *Gender Role and Political Office: Effects of Perceived Masculinity/Femininity of Candidate and Political Office*, 13 PSYCHOL. OF WOMEN Q. 77, 77–78 (1989).

147. See Heilman, *supra* note 134, at 269.

148. See Eagly & Karau, *supra* note 90, at 598.

149. See Ridgeway, *supra* note 117, at 647–52.

150. See Eagly & Karau, *supra* note 90, at 573–98; Heilman, *supra* note 134, at 269–98; Ridgeway, *supra* note 117, at 642–50.

managers lagged behind male managers in terms of fitting the mold of the ideal successful middle manager.¹⁵¹

Does role incongruity and lack-of-fit between gender roles and worker roles actually affect hiring decisions for female compared to male job applicants? One way to test this question, while preventing the contaminating influence of other possible explanations, is to examine whether applicants with identical qualifications are evaluated differently simply on the basis of the name on their resumes (i.e. a female name versus a male name). This paradigm, originally developed by Goldberg,¹⁵² has been used in a number of studies to examine hiring decisions of male versus female applicants with equal qualifications.¹⁵³ In the typical study, researchers presented resumes to participants; half the participants received a resume with a female name attached to it whereas the other half received the same resume but with a male name attached to it.¹⁵⁴ Statistical meta-analyses of such studies revealed that male applicants were preferred over female applicants for jobs rated as male sex-typed but females were preferred over males for jobs rated as female sex-typed.¹⁵⁵

The beauty of these studies lies in the fact that they used an unobtrusive method to uncover the presence or absence of hiring discrimination without directly asking evaluators if they were biased against female applicants. Because different participants evaluated resumes of ostensible male versus female candidates, they were clearly unaware that the sex of the resume holder was the critical variable that biased their evaluations. Moreover, because the resumes were identical except for the candidate's sex, they allow a causal conclusion to be drawn about the effect of applicants' sex on hiring decisions. Taken together,

151. See Madeline E. Heilman et al., *Sex Stereotypes: Do They Influence Perceptions of Managers?*, 10 J. SOC. BEHAV. & PERS'LTY 237 (1995); Heilman et al., *supra* note 134, at 936; see also Richard F. Martell et al., *Sex Stereotyping in the Executive Suite: "Much Ado About Something,"* 13 J. SOC. BEHAV. & PERS'LTY 127, 128 (1998).

152. See generally Philip Goldberg, *Are Women Prejudiced Against Women?*, 5 TRANSACTION 316 (1968).

153. See Heather K. Davison & Michael J. Burke, *Sex Discrimination in Simulated Employment Contexts: A Meta-Analytic Investigation*, 56 J. VOCAT'L BEHAV. 225, 232-34 (2000); Alice H. Eagly et al., *Gender and the Evaluation of Leaders: A Meta-Analysis*, 111 PSYCHOL. BULL. 3, 7-9 (1992); Judy D. Olman et al., *The Impact of Applicant Gender Compared to Qualifications on Hiring Recommendations: A Meta-Analysis of Experimental Studies*, 41 ORG'L BEHAV. & HUM. DEC. PROC'S 180, 180-95 (1988); Janet Swim et al., *Joan McKay Versus John McKay: Do Gender Stereotypes Bias Evaluations?* 105 PSYCHOL. BULL. 409, 414-19 (1989); Henry L. Tosi & Steven W. Einbender, *The Effects of the Type and Amount of Information in Sex Discrimination Research: A Meta-Analysis*, 28 ACAD. MGMT. J. 712, 713-19 (1985).

154. See Davison & Burke, *supra* note 153; Eagly et al., *supra* note 153; Olman et al., *supra* note 153, at 184; Swim et al., *supra* note 153, at 414-19; Tosi & Einbender, *supra* note 153.

155. See Davison & Burke, *supra* note 153, at 235-37; Eagly et al., *supra* note 153, at 15; Olman et al., *supra* note 153, at 194; Swim et al., *supra* note 153, at 414-19; Tosi & Einbender, *supra* note 153.

these findings allow the interpretation that participants implicitly discriminated against women simply on the basis of sex without awareness or intent.

Even though many of the above mentioned studies were controlled laboratory investigations where one might be concerned about external validity, there are several reasons to be confident about the generalization of resume studies to real world hiring decisions. First, participants in many of these studies were managers or recruiters, not simply college students.¹⁵⁶ Second, a meta-analysis has shown that the magnitude of bias in studies with student participants was statistically equivalent to the bias found in studies with nonstudents.¹⁵⁷ Third, naturalistic field experiments replicated these findings by sending fake job applications to real businesses¹⁵⁸ or by having fake applicants respond by telephone to real advertised jobs.¹⁵⁹ For example, in a study done by Levinson, male and female students responded to classified advertisements in two Atlanta newspapers for jobs that were either male or female dominated.¹⁶⁰ The majority of callers whose sex did not match the sex of the typical job holders elicited discriminatory responses including skeptical and discouraging reactions or outright refusals based on sex.¹⁶¹

Once hired into management or leadership positions, women often find that decision makers use higher standards to evaluate their competence and ability compared to their male peers even when both objectively engage in the same behavior.¹⁶² In studies conducted by Foschi, male and female participants first worked individually and then in mixed-sex teams on the same task.¹⁶³ Even though male and female participants had achieved similar levels of performance while working alone, once in mixed-sex teams, men judged their female team members

156. Olman et al., *supra* note 153, at 188.

157. *Id.* at 180, 190.

158. See Michael Firth, *Sex Discrimination in Job Opportunities for Women*, 8 SEX ROLES 891, 892-93 (1982); Shelby McIntyre et al., *Preferential Treatment in Preselection Decisions According to Sex and Race*, 23 ACAD. MGMT. J. 738, 739-40 (1980).

159. Richard M. Levinson, *Sex Discrimination and Employment Practices: An Experiment with Unconventional Job Inquiries*, in WOMEN & WORK: PROBLEMS & PERSPECTIVES 54 (Rachel Kahn-Hut et al. eds., 1982).

160. *Id.*

161. *Id.* at 56-60.

162. See, e.g., Martha Foschi, *Double Standards for Competence: Theory and Research*, 26 ANN. REV. SOC. 21, 21 (2000) [hereinafter Foschi, *Competence*]; Martha Foschi, *Double Standards in the Evaluation of Men and Women*, 59 SOC. PSYCHOL. Q. 237, 238 (1996) [hereinafter Foschi, *Evaluation*]; Martha Foschi et al., *Gender and Double Standards in the Assessment of Job Applicants*, 57 SOC. PSYCHOL. Q. 326, 326-27 (1994).

163. See Foschi, *Evaluation*, *supra* note 162, at 241-43, 248.

to be less competent than vice versa.¹⁶⁴ Similarly, men evaluated their own competence to be higher than that of their female team members.¹⁶⁵ The women agreed—they too saw themselves as less competent than their male partners.¹⁶⁶ These and other studies by Foschi and colleagues show that such “double standards,” inferring disparate underlying ability from performance, are evoked in any setting in which the status implications of gender are implicitly salient, due to the mixed-sex setting, as in Foschi’s teams, or the gender-linked nature of the context.¹⁶⁷ Biases in inferences about ability produced by these double standards are especially strong for women performing male-typed roles or tasks.¹⁶⁸

Again, these findings are not limited to lab studies with student samples. Using archival data from real organizations, Lyness and Heilman found virtually identical results when they examined the effect of the sex of job-holders and the type of position (i.e., upper-management “line jobs” versus staff jobs) on performance evaluations, and the impact of those evaluations on promotions during the next two years.¹⁶⁹ The lack of fit model, role incongruity theory, and status-expectations theory all argue that there is greater lack of fit between women’s expected traits and skills and the requirements of upper-management line jobs compared to staff jobs.¹⁷⁰ Consistent with this, Lyness and Heilman found that women in upper-level line jobs received less positive evaluations than women in staff jobs or men in either type of job.¹⁷¹ Moreover, women were held to a stricter promotion standard than men (as indicated by the fact that among promoted individuals, women had higher performance evaluations than their male peers); and actual performance mattered more for women’s promotion than men’s promotion.¹⁷² Researchers also compared “similarly situated” senior executives who were male or female, using archival data, and found no sex differences in wages, but significant differences in other job-related “perks”: women had less authority in their positions than men; they

164. *Id.* at 242–45, 250.

165. *Id.*

166. *Id.* at 241.

167. Foschi, *Competence*, *supra* note 162, at 24–32.

168. Janet K. Swim & Lawrence J. Sanna, *He’s Skilled, She’s Lucky: A Meta-Analysis of Observers’ Attributions for Women’s and Men’s Successes and Failures*, 22 PERS’LTY & SOC. PSYCHOL. BULL. 507, 508 (1996).

169. See Karen S. Lyness & Madeline E. Heilman, *When Fit Is Fundamental: Performance Evaluations and Promotions of Upper-Level Female and Male Managers*, 91 J. APPLIED PSYCHOL. 777, 778 (2006).

170. See Eagly & Karau, *supra* note 90, at 573–76; Heilman, *supra* note 134, at 269–70; Wagner & Berger, *supra* note 94, at 1, 3–4, 8.

171. Lyness & Heilman, *supra* note 169, at 780–81.

172. *Id.* at 781–82.

received fewer stock options, and had less international mobility than men.¹⁷³

Using a very different sample of workers, another field study revealed virtually identical results.¹⁷⁴ Biernat and colleagues examined U.S. army captains' judgments of their own and others' leadership ability while attending a leadership training course.¹⁷⁵ After controlling for a variety of status factors including merit and years in the rank of captain, results showed that army captains evaluated their male peers as having more leadership skills than their female peers.¹⁷⁶ This bias in favor of male leadership was evident even in female army captains' self-evaluations, particularly when women were solos or tokens in their team.¹⁷⁷

3. *Backlash Against Female Leaders*

In addition to receiving biased evaluations of their performance and promise, female managers or leaders who are similar to their male counterparts sometimes suffer other penalties because they violate injunctive gender norms. Because these norms describe how men and women *should* be, those who behave inconsistently with the norms may be subject to sanctions.¹⁷⁸ To act as effective and powerful leaders in masculine work domains, women as well as men are often required to express high levels of agentic behavior (e.g., being directive and assertive) and relatively lower levels of communal behaviors (e.g., being sensitive and nice). For women, however, this pattern of behavior violates the prescriptive gender role that requires women to be highly communal. As a consequence, women leaders are often evaluated harshly and evoke a hostile, backlash reaction when they engage in highly directive behavior.¹⁷⁹ A woman's agentic qualities may be seen as more extreme because evaluators use a within-sex standard (how assertive is this woman compared to the average woman?), whereas the same qualities in a man may be seen as less extreme because his behavior

173. See Karen S. Lyness & Donna E. Thompson, *Above the Glass Ceiling? A Comparison of Matched Samples of Female and Male Executives*, 82 J. APPLIED PSYCHOL. 359, 360–61 (1997).

174. See Monica Biernat et al., *All That You Can Be: Stereotyping of Self and Others in a Military Context*, 75 J. PERS'LTY & SOC. PSYCHOL. 301, 301–02 (1998).

175. *Id.*

176. *Id.* at 313–14.

177. *Id.* at 314–15.

178. See Laurie A. Rudman & Kimberly Fairchild, *Reactions to Counterstereotypic Behavior: The Role of Backlash in Cultural Stereotype Maintenance*, 87 J. PERS'LTY & SOC. PSYCHOL. 157, 157 (2004).

179. See Doré Butler & Florence L. Geis, *Nonverbal Affect Responses to Male and Female Leaders: Implications for Leadership Evaluations*, 58 J. PERS'LTY & SOC. PSYCHOL. 48, 49 (1990); Eagly et al., *supra* note 153, at 5; Madeline E. Heilman et al., *Penalties for Success: Reactions to Women Who Succeed at Male Gender-Typed Tasks*, 89 J. APPLIED PSYCHOL. 416, 417 (2004); Henry A. Walker et al., *Gender, Interaction, and Leadership*, 59 SOC. PSYCHOL. Q. 255, 269 (1996).

is compared to a different, all-male standard.¹⁸⁰ These negative assessments have serious penalties for women's overall job evaluations and future recommendations for organizational rewards as demonstrated by Heilman and colleagues using both student and managerial samples.¹⁸¹

Measuring implicit attitudes using IAT reveals similar negativity toward female leaders.¹⁸² Specifically, Rudman and Kilianski found that participants tend to express more implicit negative attitudes toward female authorities as compared to male authorities.¹⁸³ Both male and female students were faster at responding to negative compared to positive words after seeing images of female authority figures (e.g., doctor, boss, judge) but responded equally quickly to negative and positive words after seeing images of male authority figures.¹⁸⁴ Although female students self-reported less bias against female authorities on questionnaires compared to their male peers, both sexes showed equal bias on implicit attitude tasks.¹⁸⁵

A second form of backlash against women in leadership roles is evident in perceivers' differential reactions to self-promoting behavior when it comes from women compared to men. Self-promotion makes one's competence visible to others and, as such, is a component of an agentic orientation. Women are typically more modest about their successes in public than private self-presentations.¹⁸⁶ However, when they do self-promote publicly, women suffer more negative consequences than men do. Rudman conducted a series of experiments examining people's reactions to men and women who described themselves in either a self-promoting or self-effacing manner.¹⁸⁷ Results showed that when women self-promoted by speaking directly and highlighting their own accomplishments participants judged them as less likable, attractive, and hireable compared to men who behaved in an identical fashion.¹⁸⁸

180. See Monica Biernat, *The Shifting Standards Model: Implications of Stereotype Accuracy for Social Judgment*, in *STEREOTYPE ACCURACY: TOWARD APPRECIATING GROUP DIFFERENCES* 87 (Yueh-Ting Lee et al. eds., 1995).

181. Heilman et al., *supra* note 179 at 426.

182. Laurie A. Rudman & Stephen E. Kilianski, *Implicit and Explicit Attitudes Toward Female Authority*, 26 *PERS'LTY & SOC. PSYCHOL. BULL.* 1315, 1323 (2000); Laurie A. Rudman & Kimberly Fairchild, *Reactions to Counterstereotypic Behavior: The Role of Backlash in Cultural Stereotype Maintenance*, 87 *J. PERS'LTY & SOC. PSYCHOL.* 157, 164 (2004).

183. Rudman & Kilianski, *supra* note 182, at 1323-24.

184. *Id.* at 1325-26.

185. *Id.*

186. Kimberly A. Daubman et al., *Gender and the Self-Presentation of Academic Achievement*, 27 *SEX ROLES* 187, 187 (1992); Laurie Heatherington et al., *Two Investigations of "Female Modesty" in Achievement Situations*, 29 *SEX ROLES*, 739, 740 (1993).

187. Laurie A. Rudman, *Self-Promotion as a Risk Factor for Women: The Costs and Benefits of Counterstereotypical Impression Management*, 74 *J. PERS'LTY & SOC. PSYCHOL.* 629, 629-30 (1998).

188. *Id.* at 640.

Interestingly, in some situations female disapproval of self-promoting women was stronger than male disapproval of self-promoting women.¹⁸⁹

Discriminatory performance evaluations and backlash against women leaders increases when visual cues such as pregnancy, feminine dress, or physical attractiveness increase the salience of a professional woman's gender rather than her profession, thus spotlighting the perceived lack of fit between her gender role and her professional role.¹⁹⁰ In other words, personal characteristics such as pregnancy, feminine dress and physical attractiveness make women seem particularly unqualified for leadership compared to their male counterparts—most likely because these cues increase the accessibility of feminine stereotypes.¹⁹¹ Women's gender role and feminine characteristics also become noticeable when they comprise a small numeric minority in the workplace, which in turn gets heavily weighted in others' perceptions of them.¹⁹² Finally, when perceivers' cognitive resources are limited (under conditions of distraction or multitasking), they are more likely to rely on stereotypical beliefs such as gender stereotypes.¹⁹³

In many of the above mentioned studies on bias against women leaders, decision makers may not have been aware of their disparate treatment of women because they did not make comparative evaluations of equally situated men versus women in the same moment. For example, in the laboratory studies, different groups of participants evaluated either a male job candidate or a female job candidate who

189. *Id.*

190. Thomas F. Cash et al., *Sexism and "Beautyism" in Personnel Consultant Decision Making*, 62 J. APPLIED PSYCHOL. 301, 309 (1977); Sandra Forsythe et al., *Influence of Applicant's Dress on Interviewer's Selection Decisions*, 70 J. APPLIED PSYCHOL. 374, 378 (1985); Jane A. Halpert et al., *Pregnancy as a Source of Bias in Performance Appraisals*, 14 J. ORG. BEHAV. 649, 655 (1993); Madeline E. Heilman & L. R. Saruwatari, *When Beauty is Beastly: The Effects of Appearance and Sex on Evaluations of Job Applicants for Managerial and Nonmanagerial Jobs*, 23 ORG. BEHAV. & HUM. DEC. PROC.'S 360, 360-72 (1979).

191. See sources cited *supra* note 190.

192. ROSABETH M. KANTER, MEN AND WOMEN OF THE CORPORATION 207 (1993); Madeline E. Heilman, *The Impact of Situational Factors on Personnel Decisions Concerning Women: Varying the Sex Composition of the Applicant Pool*, 26 ORG'L BEHAV. & HUMAN PERFORM. 386, 393 (1980); Shelley E. Taylor & Susan T. Fiske, *Salience, Attention, and Attribution: Top of the Head Phenomena*, in 11 ADVANCES EXPM'T'L SOC. PSYCHOL. 249-88 (Leonard Berkowitz ed., 1978); see also Alice H. Eagly et al., *Gender and the Effectiveness of Leaders: A Meta-Analysis*, 117 PSYCHOL. BULL. 125, 140 (1995).

193. Cf. Daniel T. Gilbert & J. Gregory Hixon, *The Trouble of Thinking: Activation and Application of Stereotypic Beliefs*, 60 J. PERS'LTY & SOC. PSYCHOL. 509, 509-10 (1991) (showing reliance on racial stereotypes); Arie W. Kruglanski & Tallie Freund, *The Freezing and Unfreezing of Lay-Inferences: Effects on Impression Primacy, Ethnic Stereotyping, and Numerical Anchoring*, 19 J. EXPM'T'L SOC. PSYCHOL. 448, 456-57 (1983) (showing reliance on ethnic stereotypes); C. Neil Macrae et al., *Processing Load and Memory for Stereotype-Based Information*, 23 EUR. J. SOC. PSYCHOL. 77, 77-87 (1983).

were identical on all dimensions except for their sex.¹⁹⁴ Participants were unaware that their evaluations would be compared to those of others who had judged a person that was identical except for his or her sex.¹⁹⁵ In the field studies, researchers selected similarly situated professionals from data archives, and compared their job evaluations, promotions and so forth after statistically controlling for all other confounding factors.¹⁹⁶ Therefore, both the laboratory and field studies suggest that gender biased evaluations of female professionals may often operate implicitly, without decision makers' awareness or intention. Thus, had they been asked, these decision makers were unlikely to have had the introspective knowledge to report that the perceived lack of fit between gender role and professional role was one factor that motivated their evaluations of a female professional.

E. BIAS AGAINST FULL-TIME WORKERS WHO ARE ALSO CAREGIVERS

People have mental representations of the ideal worker which include characteristics such as long work hours, few absences from work, few career disruptions, little caregiving responsibility, and willingness to relocate.¹⁹⁷ The image of the ideal worker, like that of the ideal leader, is closer to the traditional masculine gender role than the feminine gender role, largely because the feminine role links women, and especially mothers, with primary responsibility for caregiving in the family.¹⁹⁸ As a result, individuals who occupy a full-time working role but also have a caregiving role at home that requires flexible work hours, absences from work, and career disruptions are likely to be perceived as incongruent with the ideal worker model. This begs the question: Is there any evidence that the perceived lack of fit between caregiving roles (feminine) and worker roles (masculine) produces discrimination against

194. Shelley J. Correll et al., *Getting a Job: Is there a Motherhood Penalty?*, 112 AM. J. SOC. 1287, 1287–88 (2007); Amy J.C. Cuddy et al., *When Professionals Become Mothers, Warmth Doesn't Cut the Ice*, 60 J. SOC. ISSUES 701, 701–18 (2004); Fuegen et al., *supra* note 138.

195. See sources cited *supra* note 194.

196. Avellar & Smock, *supra* note 138, at 602–03; Budig & England, *supra* note 138; Joni Hersch & Leslie S. Stratton, *Household Specialization and the Male Marital Wage Premium*, 54 INDUS. & LAB. REL. REV. 78, 78–79 (2000); Whitehouse, *supra* note 138, at 381–82.

197. See WILLIAMS, *supra* note 138, at 1–6; Joan Acker, *Hierarchies, Jobs, Bodies: A Theory of Gendered Organizations*, 4 GENDER & SOC'Y 139, 145 (1990); George W. Albee & Melissa Perry, *Economic and Social Causes of Sexism and of the Exploitation of Women*, 8 J. CMTY. & APPLIED SOC. PSYCHOL. 145, 145 (1998); Rosalind C. Barnett, *Preface: Women and Work: Where Are We, Where Did We Come From, and Where Are We Going?* 60 J. SOC. ISSUES 667, 667–68 (2004); Steven Mintz, *From Patriarchy to Androgyny and Other Myths: Placing Men's Family Roles in Historical Perspective*, in MEN IN FAMILIES: WHEN DO THEY GET INVOLVED? WHAT DIFFERENCE DOES IT MAKE? 24 (Alan Booth & Ann C. Crouter eds., 2000); Patricia, M. Rowe, *Decision Processes in Personnel Selection*, 16 CAN. J. BEHAV. SCI. (SPECIAL ISSUE) 326, 333 (1984). See generally SCOTT COLTRANE, *FAMILY MAN: FATHERHOOD, HOUSEWORK, AND GENDER EQUITY* (1996).

198. WILLIAMS, *supra* note 138, at 30–31.

employees who are caregivers? That is, are workers who give evidence of being primary caregivers judged to be less competent or less desirable workers, independent of their actual job performance?¹⁹⁹

Research answers these questions in the affirmative. Judiesch and Lyness investigated the impact of leaves of absence—many of which were due to caregiving responsibilities—and managers' gender on their career success and rewards including promotions and salary raises.²⁰⁰ Leave characteristics included the length of time away from work, single versus multiple occurrences, and leaves due to family responsibility versus sickness.²⁰¹ Results showed that leaves of absence predicted significantly fewer future promotions and smaller salary increases, regardless of the reason for the leave and regardless of the sex of the manager.²⁰² Leaves of absence also negatively impacted managers' performance ratings, but only if the leaves had been taken during the year of the performance evaluation.²⁰³ This evidence suggests that leaves of absence necessitated by caregiving responsibilities affect both male and female caregivers. However, because women are much more likely to be in the primary caregiver roles, they are more likely to require such leaves of absence than are men.²⁰⁴ Thus, the negative effect of leaves on performance ratings is likely to be especially consequential for women managers.

Other evidence also suggests that role incongruity between caregiving and professional responsibilities hits women particularly hard. Survey research found that mothers suffer a substantial wage penalty (the motherhood penalty).²⁰⁵ Statistical analyses using cohorts of women drawn from national longitudinal surveys between 1975 and 1998 revealed that even after controlling for human capital variables and other confounds, each additional child is associated with a negative effect on women's wages.²⁰⁶ Moreover, this penalty has not diminished in the past twenty years.²⁰⁷ Fathers do not suffer such a wage penalty and one study suggests that they may even earn a "marriage premium."²⁰⁸

Extending beyond surveys, a number of audit studies and controlled laboratory experiments have attempted to shed light on the causal

199. See Ridgeway & Correll, *supra* note 138, at 683–84.

200. Judiesch & Lyness, *supra* note 138, at 643.

201. *Id.* at 643–44.

202. *Id.* at 647.

203. *Id.* at 647–48.

204. BIANCHI ET AL., *supra* note 138.

205. See Avellar & Smock, *supra* note 138, at 603; Budig & England, *supra* note 138; Whitehouse, *supra* note 138.

206. See Avellar & Smock, *supra* note 138, at 604; Budig & England, *supra* note 138, at 204–05.

207. See Avellar & Smock, *supra* note 138, at 604.

208. See Hersch & Stratton, *supra* note 196, at 78.

explanation underlying this sex difference (i.e., is it caused by discrimination or something else?).²⁰⁹ For instance, Fuegen and colleagues found that mothers were held to stricter employment standards than fathers.²¹⁰ Student participants evaluated a fictitious job applicant who was either male or female and single or married with children.²¹¹ The applicant's qualifications were identical across all conditions.²¹² Results showed that participants saw female applicants with children as least suitable for promotions compared to male applicants with children and nonparent applicants.²¹³ Male applicants with children experienced an advantage in some domains; for example, in terms of performance and time commitment, fathers were held to a significantly lower standard for hiring compared to mothers and single individuals.²¹⁴ Extending the same idea, Cuddy and colleagues found that working mothers are evaluated as less competent but more warm whereas working fathers are evaluated as both competent and warm.²¹⁵ Participants heavily weighted competence judgments in hiring and promotion decisions, whereas warmth judgments did not matter.²¹⁶ Thus, working mothers' perceived loss of competence hurt their chances of getting ahead professionally while their gain in warmth did not help them.

Correll and colleagues found similar results in a coordinated pair of laboratory and audit studies in which participants evaluated job applications from two equally qualified individuals of the same sex who only differed on parental status.²¹⁷ The laboratory experiment using student participants found that mothers were penalized in terms of perceived competence, days allowed to be late, and recommendations for hiring, management training, and starting salary.²¹⁸ However, men were not penalized for, and sometimes benefited from, being a parent.²¹⁹ In the audit study, the same job applications used in the lab study were sent to actual employers in response to advertised positions.²²⁰ Data from the

209. See Correll et al., *supra* note 194, at 1287-1338; Cuddy et al., *supra* note 194, at 707-08; Robert Drago et al., *The Avoidance of Bias Against Caregiving: The Case of Academic Faculty*, 49 AM. BEHAV. SCIENT. 1222, 1227-28 (2006); Fuegen et al., *supra* note 138; Lyness & Thompson, *supra* note 173, at 632-33.

210. Fuegen, et al., *supra* note 138, at 745-46.

211. *Id.* at 741-43.

212. *Id.* at 747-54.

213. *Id.*

214. *Id.*

215. Cuddy et al., *supra* note 194, at 709-10.

216. *Id.* at 710-11.

217. Correll et al., *supra* note 194, at 1287-38.

218. *Id.*

219. *Id.*

220. *Id.* at 1327-32.

audit study with real employers reinforced findings from the laboratory study with undergraduate participants; that is, prospective employers discriminated against mothers but not fathers.²²¹ Importantly, Correll and colleagues found that the degree of bias shown by actual employers towards applicants who were mothers was comparable to that expressed by undergraduate participants in the laboratory study.²²²

Persistent practices in some workplaces may reinforce subtle gender inequality, even though employers may explicitly report that they practice gender equality. In a study examining five branches of a Dutch bank, Benschop and Doorewaard used qualitative data to identify three gender-biased practices.²²³ First, they found that professional women with children were more likely than any other group (i.e., women and men without children, men with children) to be shunted into jobs with fewer responsibilities and opportunities for career advancement (the mommy track).²²⁴ Second, although very few women were present at top managerial levels, their presence was frequently invoked to support the argument that organizational practices were gender-neutral.²²⁵ Third, women were less likely to be encouraged to apply for high-level managerial positions compared to their male peers.²²⁶

While much (although not all) of the research described above finds that caregiving produces more penalties for women than men, other research reveals a robust fatherhood penalty as well.²²⁷ The difference between the situations in which men do not suffer penalty for their parental status and when they do may turn on whether the men give evidence at work of being primary caretakers rather than traditional fathers who support their family through breadwinning and have occasional caregiving responsibilities. For example, Butler and Skattebo conducted a laboratory study examining the effect of a family conflict with work on performance appraisals of men and women.²²⁸ Results showed that men who experienced a family conflict received lower

221. *Id.*

222. *Id.*

223. Yvonne Benschop & Hans Doorewaard, *Covered by Equality: The Gender Subtext of Organizations*, 19 *ORG. STUD.* 787, 791-92 (1998).

224. *Id.* at 794-95.

225. *Id.* at 792-93.

226. *Id.* at 796-97.

227. See Tammy D. Allen & Joyce E.A. Russell, *Parental Leave of Absence: Some Not So Family-Friendly Implications*, 29 *J. APPLIED SOC. PSYCHOL.* 166, 166 (1999); Adam B. Butler & Amie Skattebo, *What is Acceptable for Women May Not be For Men: The Effect of Family Conflicts With Work on Job Performance Ratings*, 77 *J. APPLIED SOC. PSYCHOL.* 553, 553 (2004); Linda K. Stroh & Jeanne M. Brett, *The Dual-Earner Dad Penalty in Salary Progression*, 35 *HUM. RESOURCE MGMT.* 181, 185 (1996); Julie Holliday Wayne & Bryanne L. Cordeiro, *Who Is a Good Organizational Citizen? Social Perception of Male and Female Employees Who Use Family Leave*, 49 *SEX ROLES* 233, 233 (2003).

228. Butler & Skattebo, *supra* note 227, at 553.

performance ratings and lower reward recommendations than men who did not, whereas ratings of women were unaffected by the experience of a family conflict.²²⁹ Another study systematically manipulated an employee's reason for taking leave from work (e.g., to care for a newborn, a sick child, a sick parent, or no leave) and the sex of that employee.²³⁰ They found that student participants rated female employees similarly regardless of whether they took leave or not.²³¹ However, male employees who took leave for birth or eldercare were seen as less likely to be helpful to their colleagues at work than their male counterparts who did not take leave and their female counterparts who took leave.²³² Moreover, male leave takers were evaluated, especially by male evaluators, as less compliant at work.²³³ Some have made the strong argument that although men's absence from work for caregiving responsibilities may be protected by policies, it may, in some cases, be viewed as less acceptable and more subject to sanctions than women's absence.²³⁴

F. RESEARCH EVIDENCE ON GENDER STEREOTYPE BIAS: CONCLUSIONS

It is clear, then, that a large and cumulative body of research has shown that (1) gender stereotypes of men as agentic and women as communal are broadly shared in the population; (2) when gender is implicitly salient in a situation due to the mixed-sex nature of the context or the gender-typed nature of the tasks involved, these gender stereotypes enter into decision makers' evaluations of individuals' performances, abilities, and suitability for hiring and leadership (unless something is done to block their effects); and (3) gender stereotypes can bias decision makers' judgments at an implicit level without their awareness nor explicit endorsement of traditional gender beliefs.

The evidence that gender stereotypes often bias assessments of competence and job suitability at an implicit level does not depend merely on a single measure of implicit bias. Instead, studies using a variety of measures and techniques have demonstrated the effects of implicit bias on judgments and behavior, creating a broad research base that spans several social scientific disciplines including psychology, sociology, and organizational behavior. As a result, it is a mistake to conflate the existence of implicit bias with any one measure such as the IAT. By the same token, it is a mistake to assume that critiques of one

229. *Id.*; see also Allen & Russell, *supra* note 227, at 184–85.

230. Wayne & Cordeiro, *supra* note 227, at 238.

231. *Id.* at 242.

232. *Id.*

233. *Id.*

234. See Stroh & Brett, *supra* note 227, at 196.

particular measure such as the IAT undermine the entire body of evidence showing the existence of implicit stereotypes and bias and their impact on judgments and behavior in the workplace.

As summarized in this Article, the research supporting implicit gender stereotypes includes laboratory experiments using undergraduate participants, field studies of employment organizations, surveys of managers and employers, audit studies of employers, and surveys of representative samples of the American population. The findings of these diverse studies are largely consistent. Furthermore, several studies have allowed for direct comparisons between stereotypic bias found in laboratory experiments with undergraduate samples and biases found in workplaces with employer samples, and found comparable levels of discrimination in both populations.

If virtually everyone is prone to gender stereotypic bias at one time or another and such bias can affect decision making without the conscious intent of the decision maker, is implicit discrimination inevitable? The research evidence suggests that the answer is a strong no. First, recent empirical studies have found that situations that draw attention to successful women leaders or to egalitarian social norms significantly undermine implicit gender stereotypic judgments.²³⁵ Second, other studies have shown that individuals can, with conscious effort, suppress the effects of stereotypes on their decisions²³⁶ and tend to do so under specific conditions. For example, when individuals expect to be held accountable for justifying their decisions as fair and nondiscriminatory, they tend to examine the bases for their decisions and the impressions their decisions will make on others more carefully, with the result that they block the biasing effects of stereotypes on their decisions.²³⁶ Third, the impact of stereotypic bias on decision is reduced

235. Shaki Asgari et al., *Reaching for Superstars: The Influence of Counterstereotypic Ingroup Members on Self-Stereotyping* (2008) (unpublished manuscript on file with the authors); Nilanjana Dasgupta, *Mechanisms Underlying Malleability of Implicit Prejudice and Stereotypes: The Role of Automaticity Versus Cognitive Control*, in *HANDBOOK OF PREJUDICE, STEREOTYPING, AND DISCRIMINATION* (Todd Nelson ed., forthcoming Oct. 2008) (on file with authors); Dasgupta & Asgari, *supra* note 100, at 654.

236. See Susan T. Fiske & Stephen L. Neuberg, *A Continuum of Impression Formation, From Category-Based to Individuating Processes: Influences of Information and Motivation on Attention and Interpretation*, in 23 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* 150 (Mark P. Zanna ed., 1990); Jennifer S. Lerner & Philip E. Tetlock, *Accounting for the Effects of Accountability*, 125 *PSYCHOL. BULL.* 255, 259 (1999); Steven L. Neuberg, *The Goal of Forming Accurate Impressions During Social Interactions: Attenuating Impact of Negative Expectancies*, 56 *J. PERS'LTY & SOC. PSYCHOL.* 374, 378-79 (1989); Steven L. Neuberg & Susan T. Fiske, *Motivational Influences on Impression Formation: Outcome Dependency, Accuracy-Driven Attention, and Individuating Processes*, 53 *J. PERS'LTY & SOC. PSYCHOL.* 431, 432 (1987); Philip E. Tetlock, *Accountability and the Perseverance of First Impressions*, 46 *SOC. PSYCHOL. Q.* 285, 285 (1983); Philip E. Tetlock, *Accountability: A Social Check on the Fundamental Attribution Error*, 48 *SOC. PSYCHOL. Q.* 227, 227 (1985); Philip E. Tetlock & Jae Kim,

to the extent that the standards for evaluating competence and making employment decisions are explicit and clear rather than ambiguous.²³⁷ Since formal procedures for evaluation in the workplace often clarify decision standards, they tend to be associated with less stereotypic bias and produce outcomes that are more equal for otherwise similar men and women.²³⁸ If there are known conditions and procedures for reducing stereotype bias in workplace decisions, then implicit bias becomes a foreseeable danger that employers can be reasonably expected to take steps to prevent.

III. SCIENTIFIC FIT

The vast literature on implicit bias has the potential to be relevant to the law of discrimination in a variety of ways. As an initial matter, however, if applicable law does not recognize implicit motivating factors as relevant in the first place, this literature is rendered immaterial at the start. It would not legally fit the applicable law. However, if motivating factors under the law include more than simply what an actor can honestly say motivated his or her behavior, then implicit considerations are material to the question presented. The research legally fits the pertinent law. But more is needed. The research must also scientifically fit applicable law. In discrimination claims under Title VII, the research might scientifically fit two separate issues. The first is whether the research foundation is sufficient to inform triers of fact regarding the general realities surrounding human cognition. Specifically, does the research support the notion that some people hold biases of which they may not be fully aware? If the answer to this first question is yes, this leads to a second question. Specifically, does the research literature indicate that experts can validly identify when a particular actor has behaved pursuant to implicit bias?

Absent a clear statement from Congress, the reasonable interpretation of Title VII is that it should track current knowledge about human cognition based on the mind sciences.²³⁹ One of the best demonstrated findings in social science over the last forty years is that people do not have complete access to the reasons underlying their behavior.²⁴⁰ People are not fully rational actors who systematically and

Accountability and Judgment Processes in a Personality Prediction Task, 52 J. PERS'LTY & SOC. PSYCHOL. 700, 700 (1987).

237. Elizabeth H. Gorman, *Work Uncertainty and the Promotion of Professional Women: The Case of Law Firm Partnership*, 85 SOC. FORCES 865, 865 (2006); Heilman, *supra* note 139, at 3–26.

238. Barbara Reskin & Debra Branch McBrier, *Why Not Ascription? Organizations' Employment of Male and Female Managers*, 65 AM. SOC. REV. 210, 210 (2000).

239. Krieger & Fiske, *supra* note 1, at 1056.

240. See generally Daniel Kahneman & Amos Tversky, *Choices, Values, and Frames*, in CHOICES, VALUES, AND FRAMES I (Daniel Kahneman & Amos Tversky eds. 2000).

consciously crunch data in order to achieve ideal or rational outcomes. It appears, instead, that they use intuitive guidelines and intellectual shortcuts—heuristics—to guide their behavior.²⁴¹ People do not think and then act; they act and then give reasons—rationalizations—for how they have acted.

It may turn out, of course, that our understanding of human judgment is incomplete and will need to be corrected as research continues to be done. Such is the fate of all science. But Title VII requires some theory of human cognition. Between the current state of the art of the science and many lawyers' armchair theories of brain function—which more nearly resemble the science of the eighteenth century—the former seems preferable. Therefore, as regards the legislative fact of what comprises the “motivating factors” that drive human behavior, the law is well advised to include those factors that are implicit. Moreover, as is true across wide swaths of the law, particularly in civil actions, the approach that is consistent with science parallels traditional practice in the law. Standards of conduct regularly demand more from actors than simply their “honest” belief that they acted reasonably; they require them to have acted reasonably in fact.

If the legally pertinent issue is whether protected group membership was a motivating factor in the decision, and proof of implicit bias is relevant to this determination, it remains to be considered whether the research scientifically fits the case. This is a question of admissibility. Under the Federal Rules of Evidence²⁴² and the well-known decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,²⁴³ judges must determine whether the basis for proffered expert opinion is more likely than not scientifically valid.²⁴⁴ The *Daubert* Court suggested a number of factors that might be considered, along with others, in making this determination.²⁴⁵ In particular, the Court stated that trial courts should consider whether (1) the basis for the opinion had been tested adequately, (2) the error rates were acceptable, (3) the findings produced by the research had undergone peer review and been published, and (4) the findings were generally accepted in the particular field from which they came.²⁴⁶

241. See Thomas Gilovich & Dale Griffin, *Introduction—Heuristics and Biases: Then and Now*, in *HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT* 2–3 (Thomas Gilovich et al. eds., 2002).

242. FED. R. EVID. 702.

243. 509 U.S. 579, 592–93 (1993).

244. *Id.*

245. *Id.* at 593–94.

246. *Id.*

As noted in Part I, trial judges as gatekeepers must evaluate the validity of the underlying research to each legal proposition for which it is offered.²⁴⁷ As regards the matter of “motivating factors,” this evaluation involves two separate factual issues—the general findings and their specific application to the case at hand. This basic dichotomy between the general and the specific was first systematically described by Professors Monahan and Walker for social science research in their landmark article describing “social frameworks.”²⁴⁸ They explained that social science research ordinarily comes into court at two levels of abstraction—as evidence describing a general phenomenon and as evidence indicating that the case is an illustration of that phenomenon.²⁴⁹ This means that research must be available to show the validity of the general phenomenon—the social framework—and the research must demonstrate that an expert can validly say whether a particular case is an instance of the more general phenomenon. As discussed above, research might very well demonstrate the phenomenon of the unreliability of cross-racial identifications, but say virtually nothing about whether or not a specific witness is mistaken in a particular case.²⁵⁰ The science associated with describing a phenomenon in a population is fundamentally different from what is needed to particularize that knowledge to an individual.²⁵¹

As Part II describes in detail, considerable research supports the existence of the general phenomenon of implicit bias. There are a number of aspects of this research that should give judges comfort regarding the robustness of the phenomenon. First, it has been the subject of many years of research attention.²⁵² Dozens of studies over several decades have demonstrated that implicit biases affect behavior.²⁵³ Second, scientists have investigated the phenomenon using different research paradigms.²⁵⁴ Researchers have not relied on just one measure or single set of measures but have found the effects of implicit bias using different measures and an assortment of experimental paradigms.²⁵⁵ Third, the studies come from many different laboratories involving large numbers of researchers.²⁵⁶ The results are not simply the findings of a small and insular group of scientists. Finally, the findings fit well with

247. See sources cited *supra* note 22.

248. Walker & Monahan, *supra* note 32, at 559.

249. *Id.*

250. See *supra* notes 7, 25, 65 and accompanying text.

251. See Faigman, *supra* note 66, at 305.

252. See *supra* note 73 and accompanying text.

253. See *supra* note 152 and accompanying text.

254. See *supra* note 156 and accompanying text.

255. See *supra* notes 108–16.

256. See sources cited *supra* notes 169–77.

other research on brain functioning and human judgment. The brain is not simply a computer that performs logical operations on stimuli (meeting a job candidate) to produce rational responses (judgments and actions), but instead often confabulates reasons to explain those judgments and actions post hoc.²⁵⁷

Expert opinion regarding how implicit bias can operate as a motivating factor that could result in a discriminatory decision appears to readily pass muster under Federal Rule of Evidence 702 and *Daubert*. This framework evidence, given the state of the art of the science, should be admitted. This does not mean, of course, that every study, or every design protocol, demonstrates the phenomenon unambiguously. Indeed, that is not how science works; science is a cumulative endeavor that relies on the accumulation of multiple experiments that converge on the same conclusion. Any individual study may be susceptible to some flaw or some alternative explanation. But collectively, if the research reveals the same finding across multiple methods, multiple samples, multiple investigators, and multiple settings, then one can be relatively confident about the veracity of those findings. Applied to the present case, research from psychology, sociology, and organizational behavior used multiple conceptual paradigms, methods, measures, and samples (students, adults, employers) to illustrate that descriptive and prescriptive gender stereotypes do indeed bias judgments and evaluations of women compared to men in professional roles, and bias judgments and evaluations of employees with primary caregiving responsibilities. Under *Daubert*, the weight of the evidence, taken in total, must demonstrate by a preponderance of the evidence that the underlying basis for proffered expert opinion is scientifically valid.²⁵⁸ Social framework evidence regarding the behavioral implications of implicit bias meets this threshold.

The research literature, however, does not indicate that an expert could determine in a specific legal case that a particular decision was the product of implicit bias. For example, research does not support a claim that a particular test (a priming task, IAT, or any other device) could accurately identify specific individuals who are motivated by implicit bias in their decision making.²⁵⁹ The state of the art of the science simply does

257. See WILSON, *supra* note 37, at 4–5; see also *supra* notes 240–41 and accompanying text.

258. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592 n.10 (1993).

259. Professor Ian Ayres has suggested that the IAT could be used in a diagnostic fashion. See IAN AYRES, *PERVASIVE PREJUDICE? UNCONVENTIONAL EVIDENCE OF RACE AND GENDER DISCRIMINATION* 424–25 (2001) (suggesting that IAT scores might “be used as a criterion for hiring both governmental and nongovernmental actors”). However, the developers of the IAT have clearly stated that this task has not been validated for such use. Anthony G. Greenwald et al., *Measuring and Using the Implicit Association Test: III Meta-Analysis of Predictive Validity*, 95 J. PERS’LTY & SOC. PSYCHOL. (forthcoming 2008); Brian A. Nosek et al., *Pervasiveness and Correlates of Implicit Attitudes and Stereotypes*, 18

not allow us to identify whether a given individual's beliefs will predict his or her subsequent behavior. Indeed, the task is even more difficult when experts seek to explain specific past decisions.²⁶⁰ As is true in most scientific arenas, the science in this area is not tailored to permit either predictions or "post-dictions" of individual behavior. For example, scientific research might tell us that a certain group has a high base rate of gender stereotyping behavior, but this does not mean that scientists can say whether any particular decision was a product of such bias. These scientific findings are about aggregate trends in large and varied samples and do not apply to each individual in those samples, though they apply to the sample as a whole. Hence, scientific findings may be valid overall but might not permit an expert to say with confidence whether a given case is an instance of that general finding.

The existing research on implicit gender bias, therefore, should be used to provide background information in legal cases on how people's decisions tend to become biased by gender stereotypes without their conscious intention. This does not mean that experts can state whether the same research findings definitively explain a specific employer's decisions in a specific circumstance. Such a specific application of research evidence to one case violates the assumption of the scientific method—i.e., the notion that scientific findings describe general principles of human behavior under certain conditions but they may not apply to every individual in those conditions. Hence, while experts might be called to educate triers of fact regarding how implicit biases might effect employment decisions, they should not be permitted to opine about whether a particular employment decision was so motivated. This judgment is ultimately for the trier of fact, and must be rendered based on the totality of the evidence. General research regarding the science of implicit bias is just one component of this inquiry.

CONCLUSION

In this Article, we consider the legal and scientific fit between discrimination claims under Title VII and scientific research on implicit gender bias. Federal Rule of Evidence 702 provides that scientific evidence is admissible if it "will assist the trier of fact to understand the evidence or to determine a fact in issue."²⁶¹ This inquiry depends on both the interpretation of the law and the import of the science. Title VII provides that it is unlawful "to discriminate against any

EUROPEAN REV. SOC. PSYCHOL 36, 36–88 (2007).

260. See CHRISTOPHER SLOBOGIN, PROVING THE UNPROVABLE: THE ROLE OF LAW, SCIENCE, AND SPECULATION IN ADJUDICATING CULPABILITY AND DANGEROUSNESS 42 (2006) (considering, in general, the problem of proving *past* mental states).

261. FED. R. EVID. 702.

individual . . . because of such individual's . . . sex."²⁶² Under this provision, an employer is liable if the gender group was a motivating factor in the negative employment decision.²⁶³ Congress, however, did not specify whether the employer's motivating factors had to be explicit, that is, specifically intended, or could be implicit.²⁶⁴ If motivating factors must be explicit, the phenomenon of implicit bias would not be relevant and, as a result, would be inadmissible. In effect, such an interpretation would enact a specific intent requirement, and a defendant would not be liable so long as he or she honestly believed that biases did not motivate his or her negative decision. Neither the law nor the science of the mind, however, supports such a crabbed interpretation of Title VII.

As regards the statutory meaning of "motivating factors," Congress was silent on whether those were limited to explicit factors. There are many good reasons to believe that the law was not meant to be so constrained. First, specific intent is a highly restrictive cognitive standard, rarely seen in civil cases and often not demanded even in criminal cases. Congress's silence on this matter is telling, and suggests that the law was not meant to create an unusually high standard of proof. Permitting implicit bias as a component of actionable "motivating factors" would be akin to a negligence standard, which is more commonly employed in civil litigation. Second, statutes ought to be interpreted in light of the best scientific knowledge of the day. The belief that cognitive processes operate in a simple linear fashion, from explicit thought to intended action, is anachronistic. It is largely uncontroversial among scientists that this mechanistic view of brain function is incorrect. Considerable psychological and sociological research demonstrates that people behave pursuant to implicit motivations and, indeed, often provide post hoc rationalizations for their behavior.²⁶⁵ People do not simply think and then act; they often act and then think. Third, the admission of evidence of implicit motives will not open the floodgates to litigation, even if the phenomenon of implicit bias is widespread. The issue presented in these cases, as it is under principles of negligence law, is whether, in light of the dangers posed by implicit bias, the employer acted reasonably. A defendant's failure to take reasonable precautions against a foreseeable danger might result in liability.

If the phenomenon of implicit motivation is relevant under Title VII, expert testimony on this issue must be supported by "good grounds."²⁶⁶

262. 42 U.S.C. § 2000e-2(a)(1) (2006).

263. 42 U.S.C. § 2000e-2(m) (2006); *see* *Desert Palace, Inc. v. Costa*, 539 U.S. 90, 94 (2003) (citing *Landgraf v. USI Film Products*, 511 U.S. 244, 250-51 (1994)).

264. *See* sources cited *supra* notes 29-32.

265. *See* discussion *supra* Part II.

266. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 590 (1993) ("The term [knowledge]

Part II reviews both the psychological and sociological literature on this subject. As is abundantly clear from this review, people's perceptions and behavior are often shaped by factors that lie outside their awareness and cannot be fully understood by intuitive methods such as self-reflection. In this Article, we limit our review to gender biases, and describe a wide range of prejudices that implicitly affect behavior, including deeply embedded gender stereotypes and biases against full-time workers who are also caregivers. This literature also belies claims that self-reports can accurately describe motivating influences.

There is good reason to be confident in the robustness of the phenomenon of implicit bias. The research literature is vast and deep. It includes laboratory experiments using undergraduate participants, field studies of employment organizations, surveys of managers and employers, audit studies of employers, and general population surveys. These diverse methodologies have largely converged to produce consistent results. The research literature, therefore, amply supports the conclusion that implicit gender stereotypes can motivate behavior.

In Title VII cases, of course, the ultimate issue is whether a particular employment decision was motivated by unlawful bias.²⁶⁷ Although expert testimony can assist the trier of fact to make this determination, the research literature on implicit motivations does not give experts the diagnostic tools to say whether a particular employment decision was a product of implicit (or explicit) bias. A clear-eyed view of the science, therefore, well supports the admission of expert testimony to educate triers of fact regarding how implicit motivation might affect behavior. However, the ultimate question whether such bias was a motivating factor in the particular case should not be the subject of expert opinion. The science can give triers of fact a framework for understanding implicit bias, but cannot specifically say whether or not it contributed to a particular employment decision.

'applies to any body of known facts or any body of ideas inferred from such facts or accepted as truths on good grounds.'" (quoting WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1252 (1986))).

267. See *supra* note 28 and accompanying text.